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ABSTRACT

This report describes a plan for developing metacognitive reflection in readers in order to improve reading comprehension in both fiction and nonfiction texts. The targeted population was sixth graders at two sites: one in an upper middle-class neighborhood of a large city, the other in a rapidly changing community in a collar suburb of that same city. The problems with reading comprehension are documented through data gathered from classroom, district, and state assessments. Analysis of pre-intervention data revealed that students exhibited a lack of comprehension skills related to both cognitive and metacognitive processing. The students lacked the ability to reflect on their own thinking processes while reading. The students also exhibited a lack of motivation to read and little conscious involvement in the reading process. They lacked the ability to transfer comprehension strategies to other content area subjects. Probable cause literature supported the findings of the pre-intervention assessments. A review of the literature suggesting possible solutions, in addition to analysis of the local settings, suggested the need for metacognitive reflection in order to enhance cognitive reading processes and strategies. This reflective process was developed through four inter-related activities taught in a specific sequence. These activities promoted active thinking during reading, provided a visual coding system to represent this thinking, and encouraged metacognitive reflection of the reading process. Post-intervention data, both objective and anecdotal, indicated an increase in metacognitive reading strategies and skills, coupled with increased motivation and emotional involvement in the reading process. Appendixes contain permission letters, pretests, metacognitive reading surveys and tally sheets, posttests, coding teacher instruments, reflection connection teacher instruments, anecdotal record forms, and sample reader response journal entries. (Contains 3 tables and 12 figures of data.) (Author/RS)

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IMPROVING READING COMPREHENSION THROUGH METACOGNITIVE REFLECTION

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An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

Requirements for the Degree of Master of Arts in Teaching and Leadership

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A review of the literature suggesting possible solutions, in addition to analysis of the local settings, suggested the need for metacognitive reflection in order to enhance cognitive reading processes and strategies. This reflective process was developed through four inter-related activities taught in a specific sequence. These activities promoted active thinking during reading, provided a visual coding system to represent this thinking, and encouraged metacognitive reflection of the reading process.

Post-intervention data, both objective and anecdotal, indicated an increase in metacognitive reading strategies and skills, coupled with increased motivation and emotional involvement in the reading process.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students of the targeted sixth grade classes are not reaching academic goals due to poor reading comprehension. Students lack metacognitive strategies and have demonstrated off-task behaviors, low motivation, and a failure to use "fix-up" strategies when they do not understand what they have read. Evidence for the existence of this problem includes anecdotal observations by the teachers, incomplete homework assignments, low-test scores, and weak participation in classroom discussion.

Immediate Problem Context – Site A

School

Site A is a neighborhood K-6 public elementary school. Site A has an enrollment of 553 students. Racially, students are 54% White, 44.5% Hispanic, 0.5% Black, and 0.5% Asian. Twenty eight and four tenths percent of the students are classified as low-income. The limited English proficient population is 15.7% and rising each year. Attendance is 94.9% with no students labeled as chronic truants. The mobility rate is 13.3%. The average class size is 22, not including the special education population, which makes up 10% of the school. Approximately 10% of the students are bussed to school.

Site A employs 20 regular classroom teachers Art, Music, Physical Education and Computer teachers and 15 certified support staff. Of these teachers, 96.5% are White, 0.05% are Asian, and 0.03% are Hispanic. Teachers have an average of 9.4 years of experience. Forty and one tenth percent have attained a master's degree or beyond. Twelve and one tenth percent are male and 87.9% are female.

The building has 20 regular classrooms, 3 special education resource rooms, separate art and music rooms, a combination gym/auditorium/lunch room, and a learning center, which combines a library and computer lab. There are 30 workstations in the computer lab. The school has a small, but active parent teacher association (PTA). Girls and boys may participate in after-school sports in fifth and sixth grades. Students can join chorus at the school, or they may participate in district-wide speech or drama activities. "Homework Helper" and "Student-On-Student" (specifically for bilingual students) programs provide supervised environments to complete homework, but do not necessarily provide one-on-one tutoring. Support services include social work, reading support, bilingual/English as a Second Language (ESL) services, a gifted program, and a variety of special education support services.

Classroom A

Classroom A, Site A, is a departmentalized sixth grade room utilized for teaching social studies, health, and spelling. Three sixth grade classes rotate through this room in three independent 75-minute blocks. Social studies is taught for approximately 50 minutes a day, and the remaining time is spent teaching either health or spelling. Spelling is held three days a week, while health is held twice a week.

Classroom A is a relatively large classroom, located on the second floor of the newest building addition. The room is tiled, and offers plenty of fluorescent light. Three large windows allow for supplemental natural lighting. The room has appropriate climate control. Directly below the windows are numerous counters with cabinets that are used mostly to house the classroom library. A large matted area is nearby for students to sit and read, or work in groups. A TV/VCR on a cart is also nestled in the general vicinity.

One large blackboard is at the front of the room, and three joined bulletin boards cover the back wall. Over the blackboard are numerous mounted maps. Above the bulletin boards are team flags made by students' base groups. A *word wall* comprises approximately one-half of the bulletin area; one-quarter is a message center, and the remaining three-quarters are used for visuals pertaining to current topics of study. Mid-way from the bulletin area is a table used for listening to books on tape and performing research.

A small corner of the room is the teacher's working area and includes a desk, two filing cabinets, and a small bookcase. To one side of the teacher's desk is an overhead projector. Next to this are two tables pushed together to form a large working area. On one side is a computer station with Internet hook-up and printer, and on the other side is an independent study or student-teacher conference area.

The room could be described as colorful and organized with students' work displayed throughout, intermixed with various inspirational posters. There is an overall motivational tone for teamwork and respect as students are arranged in groups of four to five.

Classroom B

Classroom B of Site A is located on a small second floor wing of the building where three sixth-grade classrooms are situated. Three classes of sixth graders assemble here each day for 80-minute blocks of Reading and English. It is homeroom to one of the classes that meet for attendance, study hall, and end of the day "check out" as well as special activities. It is a spacious corner classroom with six large windows. The 25 desk/chair units can be quickly moved to accommodate group activities.

There are three tall bookcases that house encyclopedias, thesauri, novels, and magazines. The front and back wall have very large chalkboards flanked by tiny squares of bulletin boards. A small bulletin board is titled "Sixth Grade Superstars" and has photos of each of the students. The teacher's desk and file cabinets are opposite the windows so the students can take advantage of the natural light from their desks.

The classroom equipment consists of a TV/VCR system, an overhead projector and wall screen, and three computers. Two are very old and are used only for educational games, while the third computer has a printer and access to the Internet.

Heating and air conditioning are provided. A long cupboard runs along the wall topped by a counter holding "In and Out" baskets, journal bins, and writing portfolios for each of the three classes. Warmth is added through posters, plants, stuffed animals, and a little rocking chair in the room.

The overall impression of the room is that it is welcoming and comfortable, but is purposefully designed for accomplishing language arts activities.

District

The 2000 School Report Card reported that this elementary district is comprised of six K-6 buildings with widely varying demographics. These buildings send seventh and eighth graders to a single newly constructed middle school. Middle school graduates usually elect to attend one of the two campuses of the local high school district.

The district's equalized assessed valuation per pupil is $105,375. The total school tax rate per $100 is $3.76. The district's total operating expenditure per pupil is $6,143 with a direct instructional expenditure of $3,669. By comparison, the state's average operating expenditure per pupil is $7,146 with a direct instructional expenditure of $4,291. The district spends an average of $39,087 for teacher's salaries, and $79,277 for administrators.

Community

Site A is a 100-year-old suburb located in a collar community of a very large midwestern city. Most of the homes, mainly brick bungalows and two-flats, were built before 1955. Single-family units, at an average price of $125,000, account for 61.9% of the housing stock. The remaining 38.1% are multi-family units with an average rent of $448 per month.

The population of 42,588 is divided into 17,860 households. Ninety percent of the people are White; 7% are Hispanic; 2% are Black; 1% are Asian. They are predominantly of Czech, German, Polish, Irish, and Italian ancestry. The average level of education is 12.7 years. Fifty-eight and seven tenths percent of the population is employed; 3.4% is unemployed; 37.8% are not in the labor force any longer. White-collar jobs, including professional, managerial, and office work, are held by over 50% of the population. About 30% are in service and trade fields. Less than 5% hold factory jobs.

Shopping is found in small businesses and strip malls along a few of the major thoroughfares, with most concentrated on a main street, which bisects the community into its north and south neighborhoods. A large hospital is located within a mile of Site A, along with its associated medical facilities and professional offices. A commuter and freight railroad is part of daily life of Site A students and their families.

The community has a large public library with a wide variety of services, but it is not within walking distance of Site A. There are ample parks with numerous programs for children in the neighborhood, as well as a Young Men's Christian Association (YMCA), which is involved in community and school affairs. Some of the students from Site A are bused there for after-school care. Three Catholic parishes and a wide variety of Protestant and Christian churches are found in the community. (Local newspaper)

The community has been undergoing changes in the last ten years. Once the home of one of the nation's highest percentages of senior citizens, young families, Hispanics, and single professionals are moving in to take advantage of the reasonable prices of homes, as well as proximity to the city. This new growth is adding larger numbers of students each year to the schools, including Site A, which now face overcrowding issues. (Local newspaper and school district bulletin)

Immediate Problem Context – Site B

School

Site B is a neighborhood parochial K-8 school. Four hundred and twenty-six students are enrolled at Site B. Of the student population, 81.92% are White; 10.79% are Asian; 5.6% are Hispanic. Ninety-nine percent of the students are Catholic, and the average class size is 23. Six tenths percent of the students receive free lunches. Less than one percent of the students have special needs such as learning disabilities, and speech and language impairment. There are 21 teachers at Site B. One hundred percent of them are White. The teachers average 12 years of experience. Fourteen and two tenths percent of them have their master's degree. There are three teacher aids on staff. Nineteen percent of the teachers on staff are male, and 81% are female (Office of Catholic Schools: Archdiocese of _______).

The school was built in 1949. Three of the wings have been added on through the years. The building includes a gymnasium, a music room, a library, a computer lab, and is connected to a church. The present church is 10 years old and was built when the previous church was converted into an auditorium. The building is undergoing noise abatement work so there is a period of transition going on throughout the building. Some of the improvements include new windows and air conditioning. Some of the after-school programs include band, student council, school newspaper, forensics, school yearbook, and service out-reach groups. One and five tenths percent of the students live within a mile and a half of the school, and none of the students are bussed. The school also has a computer club and offers before and after care of young children. The school utilizes one hundred volunteers on a regular basis who help with lunch supervision, art class, and assist teachers with instruction. Some sports programs include volleyball, track, basketball, and cross-country. Physical education and music are contracted to outside services.

The tuition at Site B is $2,150. However, the actual cost of educating a student is $2,625. The difference is made up by Archdiocesan subsidies and through student and family fundraisers. Some of these fundraisers include Mardi Gras, raffles, and candy sales. When students graduate from Site B many attend the Catholic high schools in the neighborhood. There are three such high schools within ten miles. A small percentage elect to attend public high schools (Rzany, Jan. 26, 2001).

Classroom

The classroom at Site B is located on the second floor of the building in the junior high wing. New windows were installed as part of the noise abatement program. The desks are arranged in five rows of six for a total of thirty desks. The desks can be rearranged for cooperative group activities. The teacher's desk is located in the back corner of the room.

The classroom has a TV/VCR combination unit, five computers, four printers, and one overhead projector. The computers have many different types of programs on them as well as educational games. The flooring is new. The lights are fluorescent and the ceiling has been lowered to accommodate the air conditioning unit. There is a computer table in the front of the classroom and tables for the printer and computers.

There are posters scattered throughout the room that demonstrate various types of writing styles. There are also posters depicting the lives of famous authors. Student projects always hang on the bulletin boards above the blackboard. The hallway outside the classroom also displays students' work.

Students generally describe the room as warm and friendly because it features many different types of decorations and students' work. The students assist in decorating the room, so they take pride in it. Usually students gather there before or after school to socialize or to assist the teacher.

Community

Site B is located in an outlying neighborhood of a large midwestern city. It reflects the atmosphere of the nearby suburbs rather than the personality of the urban setting. There is a major metropolitan airport in the vicinity. Although the school is close to a busy area, the streets where the school is located has the feel of a quiet suburb. All of the houses are single-family homes in the neighborhood surrounding the school. The median value of the homes in the neighborhood is $123,350. There are 3,962 housing units. The population in the neighborhood is 9,729.

Eleven and five tenths percent of the people in the neighborhood around Site B are 13 years old and under. Six percent of the people are 14-20 years old and 56% of the people are 21-64 years old. Ten and five tenths percent of the people are 75 years or older. The median family income of the neighborhood is $45,060. Forty-seven and five tenths percent of those people are male and 52.5% of the people are female. Ninety-three and five tenths percent of the people are White; 3.5% are Hispanic; 3% are Asian or Pacific Islander.

Fifty-nine percent of the community is white-collar workers while 3.5% of the community are unemployed. The majority of the occupations held by the people in the neighborhood include police officers, firemen, city workers, and hospital technicians. Forty-two percent of the people in the neighborhood have more than a high school education (Erbe, et. al., Eds., 1995).

There are two libraries in the neighborhood. A large library is located about one and a half miles away from the school. There is one Lutheran church and three Catholic churches in the neighborhood. Local businesses are very diverse consisting of restaurants, a bookstore, a law firm, and a real estate office. There are also several shopping plazas. An important charity has its headquarters in the neighborhood as well.

Four parks are located throughout the neighborhood. Each of these parks are equipped with basketball and volleyball courts. One of the parks has an indoor pool and another offers Pop Warner football. One of the parks sponsors boxing.

The neighborhood increased its population by 3,000 after the Second World War. One of the challenges that the neighborhood faces is that the population is growing older and fewer children have been born into the community that will impact the schools. One major advantage of the neighborhood is that it is so well-connected to public transportation.

National Context of the Problem

Improving reading comprehension is a national concern. In 1990, Venezsky (cited in Fusco & Fountain, p.239) reported a thirteen percent functional illiteracy rate in the United States. According to Lifford (2000, p.1), year after year students are making the same misinterpretations of literary texts used in classrooms. Gee (poor reading comprehension sets students up for failure) states that classrooms are filled with students who may have successfully passed basic reading tests, "but cannot use language to learn, to master content, to work with the new economy or to think critically about social and political affairs" (cited in Fix, 2000, p.6).

Current researchers are becoming more aware of the strategies and processes that good readers employ which poor readers fail to use.

> In recent years, educators and psychologists describe this failure as a lack of metacognition or failure to think about thinking. In contrast, more successful readers are referred to as active learners who engage in metacognitive activities which include planning before reading, monitoring understanding during reading, and checking outcomes after reading. It is generally agreed that, compared to their normally achieving peers, poor comprehenders demonstrate metacognitive deficits. (Collins, 2001, p.1)

A lack of metacognitive strategies is a concern in the educational field and in the private and public sectors as well. For a society to be productive, its members need intellectual tools that will enable them to think critically, predict outcomes, implement strategies, and thus solve problems.

> In a world where the quantity of available information is growing at an exponential rate, where problems are increasingly more complex, and where communication technologies are more and more sophisticated, it has become essential to improve one's ability to think, that is, to acquire more intellectual autonomy, a capacity for sound judgment, as well as problem solving and learning skills. (Beyer, 1987, Nickerson, 1987, Giry, 1994, cited in Huot, 2000, p.9)

Early development of metacognition is apparent in what Vygotsky calls "private speech," in which young learners vocalize as they are learning, commenting on what they know and do not know, and verbalizing the processes they are following to reach task completion. As they grow older this private speech is internalized, which is more socially acceptable. Capable learners also internalize the strategies that enable them to successfully complete tasks. When metacognition is not developed, a variety of learning problems occur. They may be manifested as learning and reading disabilities are accompanied by low self-esteem, lack of academic confidence, and are related to aptitude and social factors. These metacognitive deficits transfer across content areas ("Learning to Learn," 1997, p.2).

"A common thread of education was the development of the ability to think, but Kuhn did not believe that education was particularly successful in teaching thinking skills" (Dawson, 2000, p.4). Education needs to be more than the practice of rote memorization and the development of isolated skills. Merely acquiring knowledge does not foster thinking skills. Today's teachers face two challenges. One is that they must formally teach cognitive and metacognitive thinking strategies. Secondly, they must offer students the opportunity to apply these strategies in meaningful situations. "Increased awareness of the strategy might improve the likelihood of the user's ability to transfer the strategy into other contexts" (Dawson, 2000, p.4).

In conclusion, in our own classrooms we have students who lack direction, focus, and purpose.

We often find students following instruction or performing tasks without wondering why they are doing what they are doing. They seldom question

> themselves about their own learning strategies or evaluate the efficiency of their performance. Some children virtually have no idea what they should do when they confront a problem and are unable to explain their strategies of decision making. (Costa, 1985, cited in Best practices: What have we learned about good instruction, pp.1-2)

The development of metacognitive awareness during the reading process is critical to improving reading comprehension.

> Metacognition is a turning inward, purposely at first and automatically thereafter, to reexamine our processes of comprehending, changing interpretations of the text and our reflections in order to elaborate and deepen our own understanding of a text. We know that many children—including come who can read fluently, sound words out, and use context to identify unknown words-do not think about their own thought processes as they read, and that therefore, they aren't reading text in a critical, analytical, imaginative, or probing way. (Keane & Zimmerman, 1997, p.43)

By teaching students metacognitive strategies, we believe that they will improve their reading comprehension and thus achieve more academically, transfer knowledge beyond the classroom, and in the process become life-long learners.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

Evidence of reading comprehension problems exists at both Sites A and B, despite their differing demographics. While students at Site A exhibit more pronounced reading difficulties, standardized tests, comprehension pretests, metacognitive reading self-evaluations, and anecdotal evidence indicate a need for improved reading comprehension at both sites.

Standardized Tests

At Site A, the majority of the targeted sixth grade students took their state's standards assessment as fifth graders in the final quarter of the previous school year. Results that became available the following fall illustrate the depth of the problem at this site.

Table 1

Site A State Assessment Spring 2000

Reading	**Academic Warning**	**Below Standards**	**Meets Standards**	**Exceeds Standards**
School	1%	63%	26%	10%
District	1%	52%	32%	15%
State	1%	40%	34%	25%

The data in Table 1 asserts that 63% of the students performed below state standards in reading. The students' poor performance occurred despite the fact that in fifth grade, the population had been given diagnostic tests to find areas of concern, broken into ability groups to address their differing needs, and received additional small group instruction by a reading specialist for the lowest readers.

Site B's parochial school population was not required to take the state assessment; however, the students were measured in reading comprehension with the nationally-normed Terra Nova Multiple Assessments Test. Most of the current sixth graders were tested as fifth graders near the end of the previous school year. Their Terra Nova scores, presented in Table 2, indicate that the average comprehension level was fairly good, especially in contrast to Site A. Analysis of the range of the scores however, reflects that at least some of the students lack adequate reading competency.

Table 2

Site B Terra Nova Scores Spring 2000

	Below Average			**Average**		**Above Average**	
National Percentile	*1*	*10*	*25*	*50*	*75*	*90*	*99*
Range of Site B				26-99			

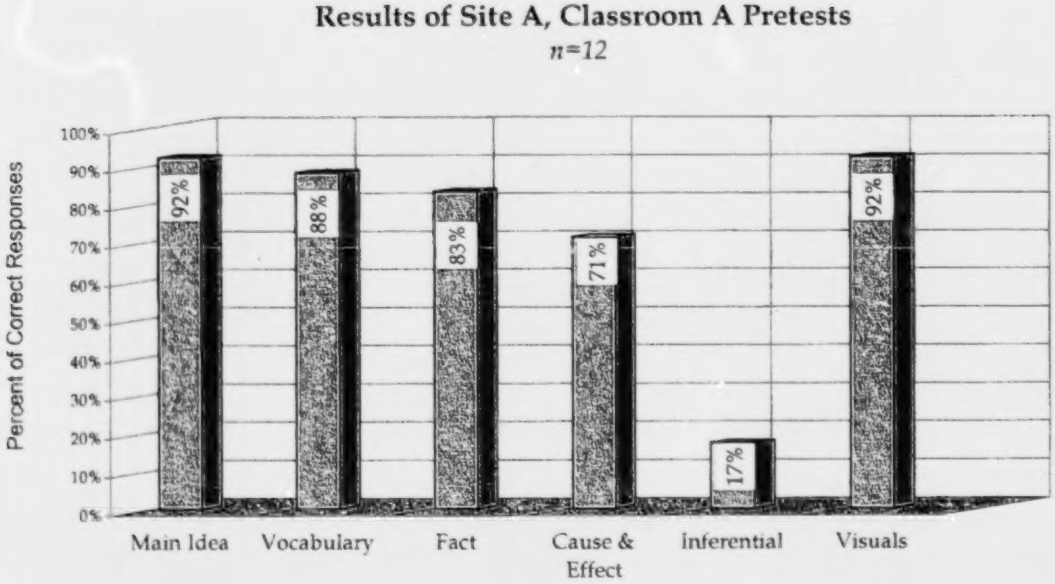
Analysis of this data indicates that the students ranged in reading scores from 25% to 99%. This data suggests a number of students were reading at the low end of the national average. Thus, these students needed a reading intervention.

Reading Comprehension Pretests

The teacher researchers developed reading comprehension pretests to determine the strengths and weaknesses of the readers in the targeted populations. Tools were developed for both fiction and nonfiction reading selections to establish baseline data. It was decided that the Site A Classroom A Social Studies class would be administered the nonfiction pretest (Appendix B), while the reading classes at Site A's Classroom B and Site B would receive identical fiction pretests (Appendix C). Thus comparisons and contrasts could be made within and between the three classrooms. Each of the pretests contained questions specifically designed to measure specific skills.

At Site A Classroom A, the nonfiction pretest (Appendix D) revealed strong contrasts in skill development. The targeted population vividly demonstrated difficulty answering inferential questions, with only 17% able to answer them correctly as seen in Figure 1.

Figure 1



In Classroom B the fiction pretests (Appendix E) revealed a less drastic, but nonetheless significant deficiency. The students' ability to determine the meaning of vocabulary from context clues was the weakest area of performance, as seen in Figure 2.

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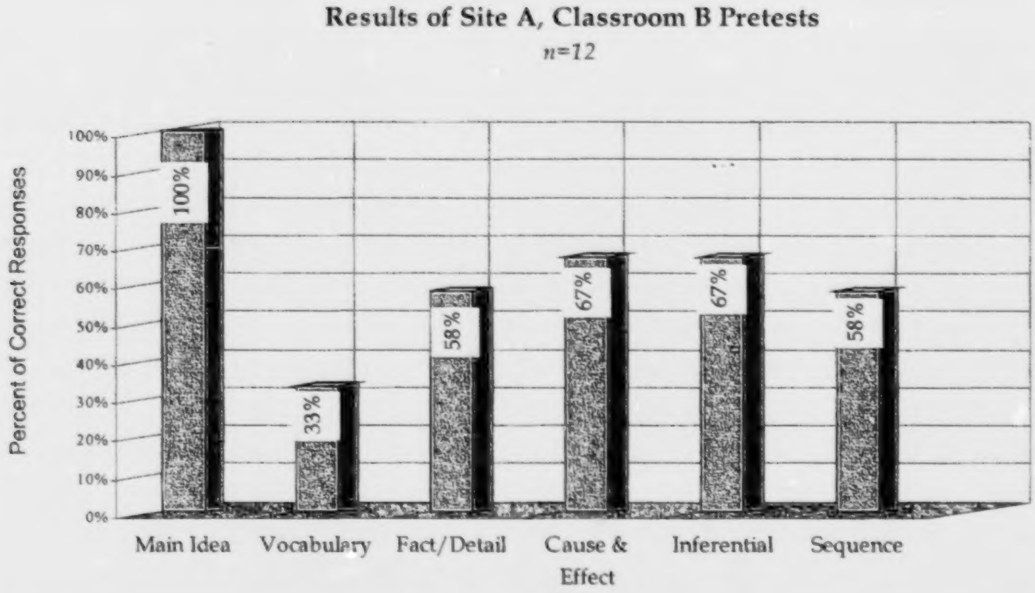
Figure 2



At Site B the targeted population fared better on the fiction pretest (Appendix F), paralleling its higher performances on the standardized test. The greatest areas of difficulty were in answering sequence and cause and effect questions, as seen in Figure 3.

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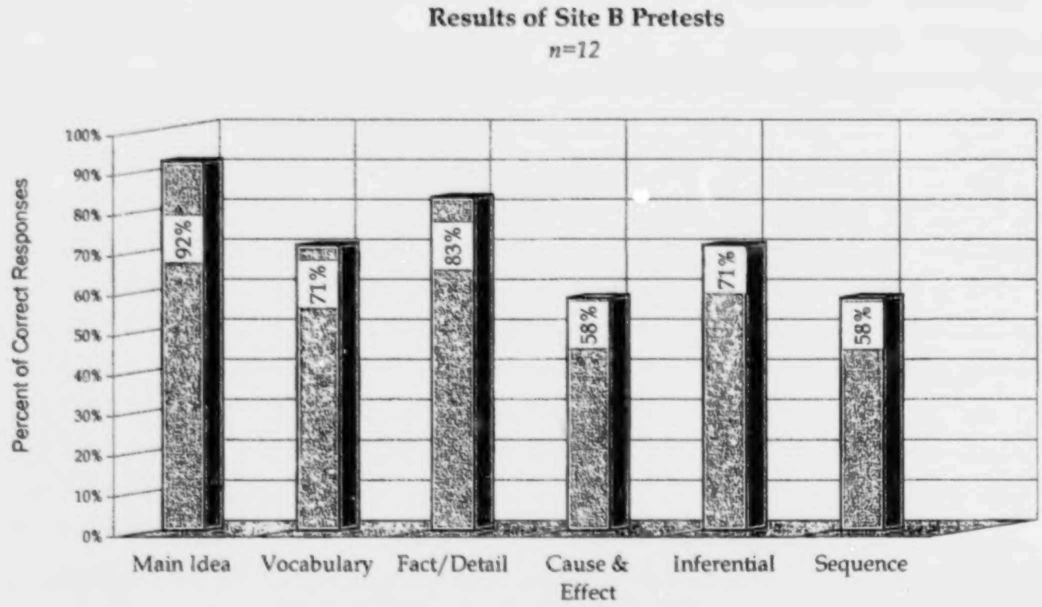
Figure 3



Comparing the data from all three classrooms revealed that all of the students performed well when confronted with questions concerning the main idea of the selection. All scored over 90% in determining the main idea.

Metacognitive Self-Evaluations

The targeted sixth-grade populations were administered the Metacognitive Reading Awareness Inventory (Appendix G) by the teacher researchers. The instrument asked them to honestly select reading strategies they believed they consciously employed during the reading process. The strategies offered were categorized as either positive or negative, but this was not revealed to the students. Students were able to select as many of the strategies that they believed they used. Upon reviewing the results seen in Table 3, the teacher researchers discerned no clear patterns (Appendices G, H, and I). After review of students' individual self-evaluations, the teacher researchers noted that students had often identified the use of both positive and negative reading strategies for a given reading scenario. This led the teacher researchers to believe that the students are aware of some of the positive reading strategies; however they are unaware of when and how to employ these strategies.

Table 3

Metacognitive Reading Awareness Self-Evaluation

Question/Strategies	Site A, Clsrm A	Site A, Clsrm B	Site B
1.What do you do if you encounter a word and you don't know what it means?			
Positive Strategies			
Use the words around it to figure it out.	66.67%	66.67%	50%
Use an outside source, such as a dictionary to figure it out.	41.67%	25%	41.67%
Temporarily ignore it and wait for clarification.	33.33%	0%	8.33%
Negative Strategy (*)			
*Sound it out.	*83.33%	*83.33%	*50%
2.What do you do if you don't know what an entire sentence means?			
Positive Strategies			
Read it again.	91.67%	83.33%	100%
Think about the other sentences in the paragraph.	50%	41.67%	33.33%
Negative Strategies			
*Sound out all the difficult words.	*16.67%	*25%	*25%
*Disregard it completely.	*33.33%	*16.67%	*0%
3.If you are reading science of social studies material, what would you do to remember the important information you've read?			
Positive Strategies			
Ask yourself questions about the important ideas.	41.67%	41.67%	58.33%
Realize you need to remember one point rather than another.	66.67%	33.33%	41.67%
Relate it to something you already know.	66.67%	41.67%	25%
Negative Strategy			
*Skip parts you don't understand.	*8.33%	*8.33%	*8.33%
4.Before you start to read, what kind of plans do you make to help you start reading?			
Positive Strategies			
Think about what you know about the subject.	16.67%	50%	41.67%
Think about why you are reading.	33.33%	25%	25%
Negative Strategies			
*No specific plan is needed; just start reading toward completion of the task.	*83.33%	*33.33%	*58.33%
*Make sure the entire reading can be finished in as short a period of time as possible.	*66.67%	*25%	*0%
5.Why would you go back and read the entire passage over again?			
Positive Strategies			
You didn't understand it.	58.33%	66.67%	75%
It seemed important to remember.	66.67%	50%	33.33%
To underline or summarize for study.	50%	25%	41.67%
Negative Strategy			
*To clarify a specific or supporting idea.	*33.33%	*41.67%	*41.67%
6.As you read a textbook, which of these do you do?			
Positive Strategies			
Adjust your pace depending on the difficulty of the material.	83.33%	25%	8.33%
Continually make predictions about what you are reading.	50%	16.67%	50%
Negative Strategies			
*Generally read at a constant pace.	*33.33%	*75%	*75%
*Skip the parts you don't understand.	*41.67%	*33.33%	8.33%
	n = 12	*n* = 12	*n* = 12

Question/Strategies	Site A, Clsrm A	Site A, Clsrm B	Site B
7.While you read, which of these is important?			
Positive Strategies			
Know when you know and when you don't know key ideas.	58.33%	25%	33.33%
Know what it is that you know in relation to what is being read.	58.33%	25%	33.33%
Know that different strategies can be used to aid understanding.	50%	50%	66.67%
Negative Strategy			
•Know that confusing text is common and usually can be ignored.	•25%	•25%	•0%
8.When you come across a part of the text that is confusing, what do you do?			
Positive Strategies			
Keep on reading until the text is clarified.	50%	50%	41.67%
Read ahead and then look back if the text is still unclear.	75%	33.33%	41.67%
Check to see if the ideas expressed are consistent with one another.	33.33%	50%	58.33%
Negative Strategy			
•Skip those sections completely; they are usually not important.	•25%	•16.67%	•0%
9.Which of the sentences are the most important in the chapter?			
Positive Strategies			
The sentences that contain the important details or facts.	91.67%	91.67%	50%
The sentences that are directly related to the main idea.	58.33%	58.33%	50%
Negative Strategies			
•Almost all of the sentences are important; otherwise they wouldn't be there.	•25%	•25%	•41.67%
•The ones that contain the most details.	•58.33%	•58.33%	•25%
	n = 12	*n* = 12	*n* = 12

As part of the metacognitive self-evaluation, the teacher researchers created two reflective questions in which the students were asked to select only one option from the four given. At Site A, Classrooms A and B revealed fairly similar proportioned responses when asked how many important points they recall after they have read a selection. About half reported that they recall "some of them," with much smaller percentages reporting remembering "most, few, or none of the points" (see Figure 4 and 5).

Figure 4

Results of Site A, Classroom A Metacognitive Question 11

"When you have finished reading a section, how many important ideas do you remember?"

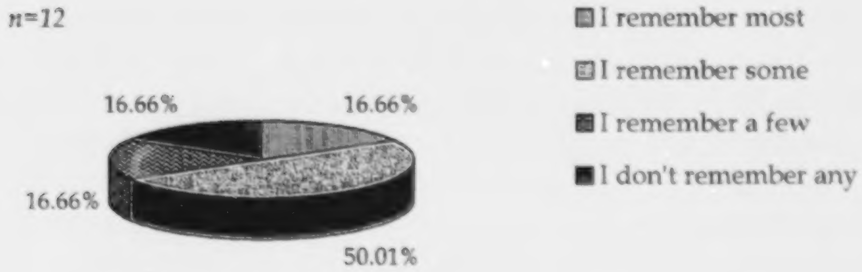
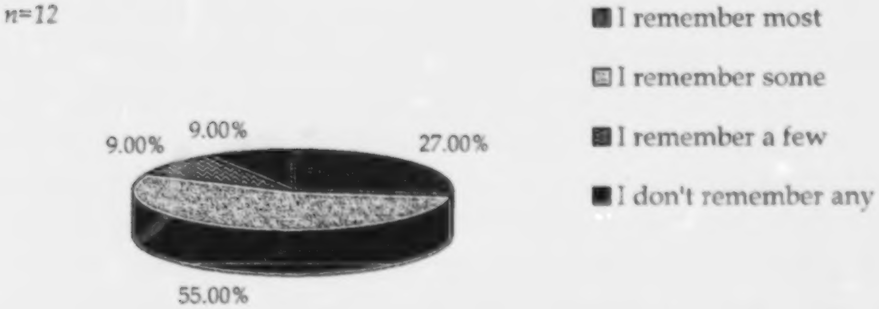


Figure 5

Results of Site A, Classroom B Metacognitive Question 11

"When you have finished reading a section, how many important ideas do you remember?"

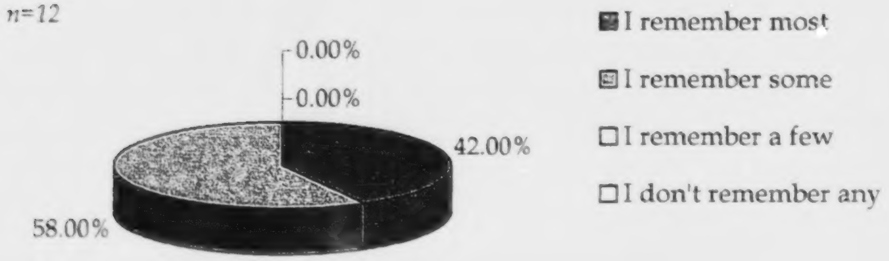


At Site B, the results proved to be intriguingly different. None of the students reported remembering "none or few" of the important ideas after reading a selection. As shown in Figure 6, a majority acknowledged recalling "most," and indeed a respectable percentage believed they remembered "all" of the information. While they do fair better on their standardized tests, Site B appears to have a slightly inflated view of their ability as readers, as do the students at Site A.

Figure 6

Results of Site B Metacognitive Question 11

"When you have finished reading a section, how many important ideas do you remember?"



A somewhat similar pattern emerged upon analysis of the responses to the second single-response self-evaluation question, which asked the readers to evaluate themselves as readers. At Site A, Classroom B students rated themselves as slightly higher than those in Classroom A, but in both rooms a clear majority viewed themselves as "average" readers. Approximately one quarter of each group rated themselves as either "below average" or "very weak." As shown in Figures 7 and 9, this contrasts fairly significantly with their state assessment that depicts fully two-thirds of them were reading below acceptable standards.

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Figure 7

Results of Site A, Classroom A Metacognitive Question 12

"How do you view yourself as a reader?"

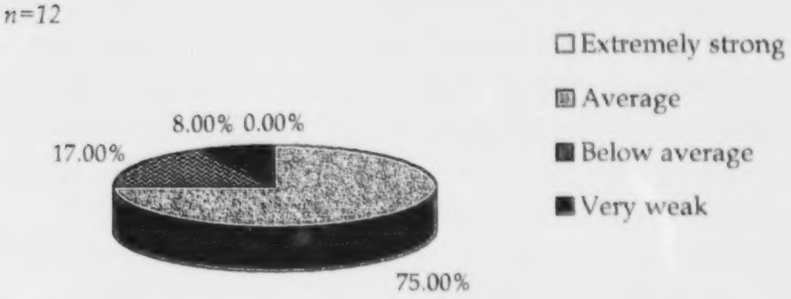
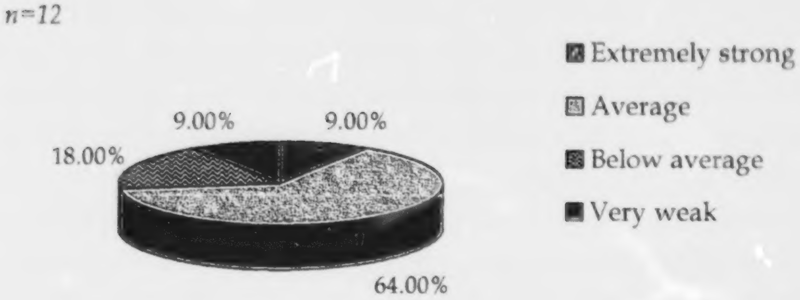


Figure 8

Results of Site A, Classroom B Metacognitive Question 12

"How do you view yourself as a reader?"



The results from the targeted population at Site B were remarkably different. The students unanimously viewed themselves as "average" readers (see Figure 9). This too,

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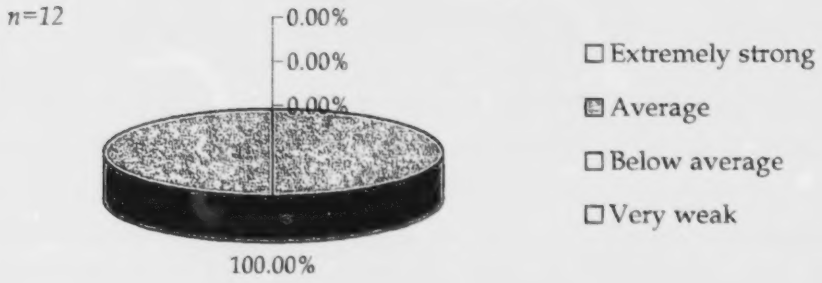
however, conflicted with their standardized test scores, as the range of scores revealed students of varying degrees of comprehension.

Figure 9

Results of Site B Metacognitive Question 12

"How do you view yourself as a reader?"



In conclusion, the reflective test revealed many students at both sites are not confident in their abilities as readers, even though their perceptions seem to be higher than standardizes test data indicates. The teacher researchers found that the students' perceptions of themselves as readers do not parallel their test results.

Anecdotal Observation

The teacher researchers at both sites observed a wide range of reading behaviors, both positive and negative, as well as noted verbal self-reporting by the students. For example, during extended silent reading opportunities, some students became quickly absorbed by the text, oblivious to their surroundings as they read. Approximately one-third of the students fidgeted in their seats, assumed odd postures, or repeatedly became visually and auditorally distracted during reading.

These off-task behaviors have been addressed at both sites through prior school-wide interventions mandated by their administrations. At Site A, all classrooms are required to set aside time for Sustained Silent Reading (SSR). Students are also asked, as part of their nightly homework, to read silently at home, with their parents confirming this by signing their reading logs. Yet despite these efforts to improve reading comprehension and concentration, the students in at least half of both classrooms at Site A had difficulty in becoming fully engaged in their silent reading texts, as observed by the teacher researchers.

At Site B, in an effort to bolster reading comprehension and motivation, school-wide programs have also been instituted. One such intervention adopted was the "Book It" program. The "Book It" program rewards the students each month if they meet their assigned reading goals. Students who meet their goals throughout the whole year are given an extra award. The "Drop Everything and Read" (DEAR) program was also instituted at Site B. The DEAR program allowed the teachers to set aside time every week for pleasure reading. Yet despite these efforts, these interventions did not improve reading comprehension or engagement among the weakest readers, as based on observation of the teacher researcher.

At both sites, the teacher researchers discovered comprehension problems when students were given assigned reading for homework. Subsequent class discussions revealed students who had little to comment on from the reading, and many acknowledged not bothering to read the assigned selections at all.

In addition, the teacher researchers discussed at-home reading practices with their classes. All three classrooms contained students who admitted that they almost never read for pleasure and that they come from families in which reading for pleasure is rarely practiced. Even daily newspapers or magazines are not available at home. Some had never been to the public library or to a bookstore. Many students reported that they spent a great deal of time on the computer or watching television, and little time was spent reading.

While there were indeed a number of students who described themselves as avid, excited readers, many reported that they disliked reading and almost proudly proclaimed they had not read a book all summer while out of school. One student from Site A, Classroom B succinctly avowed, "I hate reading." The teacher-researcher believes that this student represents the feelings of many of the struggling readers. Clearly this child and others are not feeling rewarded by their reading experiences and were not fully comprehending what they are expected to read at school in their various classes.

Conclusions

Based on the analysis of standardized tests, reading comprehension pretests, self-evaluations, and anecdotal observations by the teacher researchers, it appears that portions of the populations at both Sites A and B were not motivated to read, lacked positive reading strategies, did not comprehend enough of what they read, and did not view themselves as competent readers. Clearly, new interventions were needed in order to help those students improve as readers.

Probable Causes

As early as 1892, the process of reading comprehension has been the focus of educational inquiry. The National Education Association's Conference of Ten discussed the importance of "facilitating students' ability to comprehend the thoughts of others and to give expression to their own thoughts" (Skeans, 2000, p.1).

Two decades ago, reading instruction "focused on skill development and was viewed as a collection of discrete subskills that could be learned and measured ... comprehension was viewed as a collection of these skills that could be tested and evaluated" (Irwin, 1998, p.167). However, this skill approach to reading instruction did not resolve all of these problems readers faced.

Until the 1980s, reading instruction consisted largely of basal reading programs. At this time, however, teachers began to realize that their students were not fully comprehending what they read, and searched for other methods of instruction (Keane & Zimmerman, 1997, p.18). Debates sprang up over the effectiveness of phonics versus whole language. "Whole language as a movement began in the early 1980s and has successfully discredited the subskills orientation to reading instruction..." (Irvin, p.7). Despite this change, however, many students were still not displaying adequate comprehension, and researchers looked elsewhere to find reasons for this lack of comprehension.

Poor reading comprehension has been attributed to many factors in today's schools. In many classrooms subjects are often taught in isolation, and there is inadequate transfer in reading.

> To a dismaying extent education suffers from what might be called a 'disconnected curriculum.' But partly the disconnected curriculum reflects traditions that become entrenched in educational practice. In particular, a good

> deal of what youngsters learn does not connect very well to anything else but the class in which it is taught. (Perkins cited in Perkins & Solomon, 1992, p.208)

Further hindering the comprehension process, has been the separated instruction of reading and writing instruction in many schools.

> The concept of developmental reading was coined, which resulted in the creation of reading courses separate from English and the teaching of writing. Text book publishers continued to market separate books for reading, composition, spelling, and handwriting. (Clifford, cited in Skeans, 2000, p.2)

When these subjects are taught in isolation, there is a lack of transfer. Comprehension occurs more fully when students are required to write about what they read (Skeans, 2000, p.1).

Content area reading instruction has also been the focus of educational debate. As early as 1900, attempts were made to emphasize its importance. However, content area reading instruction has not seen wide spread implementation. Some content area teachers do not view themselves as reading instructors. Others feel pressed to cover the curriculum in the limited time available. The students themselves often view their textbooks as mere resources and feel that their teachers are their primary source of information. Therefore, they have little incentive to read content-area texts in depth utilizing comprehension strategies (Irvin, 1998, p.232).

Students have various motivational beliefs with regard to education. Poor readers often see success and failure as the result of luck or teacher bias (Knuth & Jones, 1991, p.3). "Students view literature class simply as a game of 'guess what's in the teacher's brain'" (Lifford, et. al., 2000, p.1)? Some students with reading difficulties often suffer from low self-esteem, and have a history of academic problems. They tend to feel that they have no control over their success and failures, and develop low expectations of themselves. (Collins, et. al., 2001, p.22)

Researchers began to study characteristics of poor readers. One of these was that students lacked critical thinking skills. Kuhn (2001) suggested that teachers were not successful in teaching thinking skills due to lack of information on the subject (Dawson, 2000, p.3). Reading comprehension can only be improved if students are taught to think critically. Unfortunately, many teachers lack the training and time to accomplish this.

> Although virtually all teachers already do some things to cultivate students' thinking, most have not received any formal introduction to the teaching of thinking. Time is needed to become familiar with the variety of thinking skills and processes that are important in good thinking and to find ways to work them into the curriculum. (Perkins, 1992, p.67)

Another characteristic of poor readers is their inability to monitor their comprehension as they read. "Readers who monitor their comprehension by periodically pausing, asking themselves questions, paraphrasing, and looking forward and backward in the text understand materials in greater depth than readers who simply proceed through the text identifying or pronouncing words" (Winograd & Perkins, cited in Irvin, 1998, p.). Unfortunately, this monitoring ability is difficult to teach to students. According to Pressley and Ghatala, "Research indicates that monitoring ability develops slowly and is quite poor in children and even adults" (Schraw & Graham, 1997, p.2).

A major cause for reading comprehension difficulties is the lack of metacognition. "Far too many of our children … don't have an awareness of their own comprehension. They don't have a well-developed sense of what they need to know when reading a piece or what they need to do when their comprehension breaks down" (Keane & Zimmerman, 1997, p.39). When a student finishes a reading selection many times he or she is unable to recall or comprehend the material. "They sometimes 'read' the teacher-assigned selection with little thought of their purpose for reading and often do not retain much of the information for the later discussion, text, writing assignment, or other application exercise" (Irvin, 1998, p.168).

> Good readers are able to hear a voice in their head and process the material. Poor readers merely see the words and do not synthesize the information. Good readers realize they have lost contact with the context of the text, and their minds signal them to adapt a recovery strategy: reread the beginning of the paragraph, recall a thought, scan the text for keywords … poor readers read and read and read and never know they don't know. They don't notice that they are getting no meaning from the text because they never have gotten meaning from the text. They word-call in their minds, but they are nonreaders in the real sense of reading. (Bellanca & Fogarty, 1992, p.10)

While there are many reasons why there is a lack of reading comprehension among students, the evidence suggests that lack of metacognition is one of the major causes. "The notion of learners thinking about their own thinking dates back to at least Plato and Aristotle. Yet, metacognition, a term for the concept of thinking about or controlling one's own thinking and learning processes, was not introduced until 1976 by

Flavell" (Collins et. al., 2001, p.1). The research suggests that metacognition is an area that should be more fully explored to improve reading comprehension.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Communities are trying to address reading difficulties by developing a variety of initiatives. *The Little Red Reading Book* describes one state's five-year plan to improve reading scores among its students. It highlights strategies and core abilities that it expects students to develop based on current research in reading. The components of the program contain a wide variety of approaches to improve reading from the teaching of decoding skills, to providing adequate materials, and to teach comprehension strategies. (The Little Red Reading Book, 1997, p.6)

Educators have addressed reading difficulties in a myriad of ways. Thematic units have provided students with a deeper understanding of concepts because they encourage transfer of learning. "The coherence between areas of study within the unit provides students the opportunity for making connections between concepts and recognizing relationships that they otherwise might not have recognized" (Winograd & Gaskins, 1992, p.231). Thematic units have strong implications for reading comprehension because they connect the information. "Reading/Writing Workshop, learning strategies taught in content areas and literacy instruction integrated with thematic study are promising directions for literacy development during the middle grades" (Irvin, 1998, p.235).

Another approach to improving reading comprehension is the direct instruction of cognitive learning strategies. "A learning strategy is any purposeful action that an individual takes in order to increase his or her successful completion of a task" (Winograd & Gaskins, 1992, p.229). Winograd and Gaskins highlight several reading strategies that they have taught their students.

> In our own work, we have found it useful to organize the strategies we teach into ones that students can use before reading (previewing, setting purposes, activating prior knowledge, predicting, etc.); while reading (checking and clarifying comprehension, visualizing, taking notes, etc.); and after reading (reviewing comprehension, responding to and applying different kinds of reading, etc.). (p.228)

Research has proven the effectiveness of teaching students specific strategies. Schraw and Graham (1997) report that a number of studies showed that learning improves when cognitive strategies are included in daily classroom instruction (Schraw & Graham, 1997, p.2). Silven reports that both poor and average sixth grade readers benefited from being taught text-processing strategies (Silven, 2001, p.1).

Once teachers have identified the strategies that they want their students to utilize, they can actively model the thinking processes they use during reading for their students.

> By modeling for students the types of behaviors good readers are engaged in as they read, we are providing them with the opportunity to become aware of the

> many strategies and monitoring behaviors that good readers use. With enough modeling and coached-practice, students will be on their way to becoming independent users of strategies. Eventually they will become their own coaches. (Farr & Conner, 2001, p.1)

One way to model thinking skills is through the think-aloud process. "Whimbey and Lochhead (1986) designed the 'think-aloud' problem-solving process so 'you (can) make your thinking visible to other people so that they can observe your attack on a problem'" (Fusco & Fountain, 1992, p.249). The think-aloud process actively engages readers in the text.

> By getting students to reflect on the process of thinking aloud as they read, we're encouraging them to recognize the difference between reading the words and comprehending the text. By talking about their own strategy use students gain insights into the complexities of reading, and hence expand their understanding of what it means to be a 'good reader.' (Farr & Conner, 2001, p.1)

Teaching students to be aware of various textual structures and genres and of their purposes also leads to improved comprehension. Collins states a knowledge of textual features influence comprehension and memory. This knowledge enables the student to tailor his or her reading style to the type of text and purpose for reading. It is especially important when reading informational or expository selections (Collins, 1994, p.1). Taylor (1982) found that students who were aware of text structures showed better comprehension and memory than those who did not (Taylor cited in Irvin, 1998, p.92). Therefore, it is important that teachers take the time to show their students how to most effectively use textual structures within their textbooks.

In addition to teaching students cognitive strategies, researchers have demonstrated the effectiveness of teaching metacognitive strategies in improving reading comprehension. Metacognitive reading strategies "… generalize across many tasks, help readers' awareness of whether or not they comprehend what they are reading, and assist readers' decision of what strategies to employ to aid comprehension" (Weisberg cited in Collins et. al., 2001, p.7).

A number of methods to promote metacognition have been developed. One of these metacognitive strategies is known as journaling. Journaling allows students to connect with the text and reflect on what they have just read. According to Blakey and Spence (1990), journaling gives students an opportunity to reflect upon their thinking, and makes them aware of their strengths and weaknesses as readers (Blakey & Spence, p.2). Journaling can take many different forms. One way is what Rhoades and McCabe call "wrap-ups" (Rhoades & McCabe, 1992, p.48). They are a brief activity that follows a lesson and allows students to analyze their use of specific strategies or content material. "Whatever the content of the wrap-up activity internal dialogue is shared and mediation and metacognition occur. The wrap-up can be structured to enhance any level of thinking desired, including recall, analysis, and synthesis of content information" (Rhoades & McCabe, p.48). They include specific examples of reflective stems such as: "I can use the information that I learned today because…" and "I felt the greatest strength of the character was…" (Rhoades & McCabe, p.48).

Other metacognitive strategies involving structured written responses to reading are used to advance reading comprehension. One such cognitive organizer is known as the "Think-Link chart." The Think-Link chart helps students monitor themselves while they are reading and make connections to the material. While reading an assigned selection silently, the teacher writes down various statements on the board, relating to the selection. After reading, the students are encouraged to add their own statements on the board. The students are able to visualize their thought processes and participate in a discussion based on these ideas (Skeans, 2000, p.2).

Another cognitive organizer is known as the know-want to know-learn chart (KWL) developed by Ogle (1986). "In the want to know step, students begin to think of questions concerning the topic; this step helps them generate a purpose for their reading and prepares them to monitor their comprehension" (Peregoy & Boyle, 1997, p.326). Awareness of what they know and do not know is a form of metacognitive awareness.

The Plus-Minus-Interesting strategy developed by de Bono (1970), helps students process their thinking. "In this procedure, students look at the affective, cognitive, and metacognitive levels for processing their thinking" (de Bono cited in Bellanca & Fogarty, 1992, p.12). The PMI strategy allows the students to analyze the information that they have just read and to evaluate its relevance. By paying attention to the affective component of learning, the PMI chart motivates the learner. "Research has provided clear evidence that emotions and affect influence how students think about themselves as learners. This is significant because students' self-perceptions have an impact on their ability to engage in metacognitive behavior" (Borkowski cited in Winograd & Gaskins, 1992, p.227).

Keene and Zimmerman (1997) describe a method of active reading wherein readers use a coding system to reflect their thinking as they read a selection. The students write a letter symbol on a sticky note or on the text to represent their thoughts. For example, a question mark indicated that the reader didn't comprehend the passage, or an "S" indicated that the student was surprised at what was read (Keane & Zimmerman, 1997, p.40). The coding system forces students to think constantly while they are reading. It is required that they make a judgment or evaluation after each paragraph. When the students realize they are not comprehending what they are reading, they may then employ a variety of fix-up strategies, such as rereading, to correct the problem.

The teacher researchers have decided to focus on metacognitive reflection in order to improve reading comprehension in their students. Various strategies will be taught, modeled, and practiced throughout the intervention. The teacher researchers believe that these metacognitive strategies will improve students' reading comprehension thus encouraging the transfer of learning. "The ability to think about your own thinking is essential in a world of continuous change. Through metacognition, we can develop skills that are genuinely transferable... This deep reflective capability is what helps us develop new possibilities" (Lifford, 2000, p.8).

Project Objectives and Processes

> As a result of the systematic implementation of a plan utilizing a variety of metacognitive and cognitive strategies during the period from September through December of 2001, the sixth grade students at Site A and B will increase their levels of reading comprehension and metacognitive reflection as measured by teacher-constructed objective tests, student surveys, and anecdotal records.

In order to accomplish the project objective, the following conditions will be met:

1. The students will be instructed in various interactive reading techniques, and cognitive processes will be identified and taught.
2. A systematic method will be used to record such cognitive processing, to allow for metacognitive reflection.
3. Structures and techniques will be demonstrated for metacognitive reflection on reading content and processing.
4. Opportunities for verbal discussion of personal reflection will be provided to enhance transfer of learning.

Project Action Plan

The teacher researchers developed a plan to systematically introduce cognitive reading strategies coupled with metacognitive reflection in order to facilitate greater comprehension.

Week 1

In the first week of the intervention, the targeted populations will be administered a self-assessment to record their use of reading strategies. In addition, pretests (Appendices B and C) will be administered to determine their strengths and weaknesses in their comprehension of both fiction and nonfiction selections.

Weeks 2 and 3

Each teacher researcher will model interactive reading and thinking processes as he or she orally reads a selection to the class. Reading skills and strategies (i.e. skimming, using context clues) will be stressed in the activity. The students will respond in a whole-group setting for their first attempts. They will then practice the process in small groups, and ultimately, independently. Oral reflection will accompany each stage of the process (Appendix M).

Weeks 4 and 5

When students have begun to consciously interact with the text, they will be taught to record their thinking using a simple code. Once again the teacher researchers will model the process first and the students will attempt to use the code as a whole class. They will then practice in cooperative groups, in pairs, and finally on their own. They will orally share their reflections of this technique with their classmates and the teacher researcher. The teacher researchers will complete observational checklists and anecdotal records to monitor progress (Appendix N).

Weeks 6 and 7

Once the students are familiar with reflective reading strategies, the teacher researchers will direct metacognitive development toward the text itself. In order to help students verbalize their reactions to a particular reading selection, the teacher will model the use of the reflection instrument called "The Reflection Connection." They will write what they enjoyed in the text, what was confusing to them, and what connections they made beyond the text, perhaps transferring their new knowledge to another subject area or to their personal lives. This record of reflection will serve as a basis for discussion of the text. As the students' metacognitive insights grow, discussions should become more emotionally engaging as the students access prior knowledge and personal experiences (Appendix O).

Weeks 8 and 9

The final component of the plan will be implemented; as the teacher researchers will provide opportunities for the students to reflect deeply and at greater length on their learning and reading processes. The students will record written responses in a "Reader's Response Journal" to a variety of reflective stems created by the teacher researchers. The teacher will model a response after the class reads a selection. Then small groups will compose a written response to a stem. Students will practice once more in pairs before completing an entry individually (Appendix P).

Weeks 10 to 15

In the remaining several weeks of the intervention, lessons will be designed to integrate all four of these activities. They will be used for a variety of genre so that students learn to adopt strategies to fit particular text structures, both long and short such as poetry, short stories, novels, and textbook chapters. The teacher researchers will analyze students' responses for evidence of growth and record it in their weekly anecdotal notes.

Week 16

During the final week of the intervention, the teacher researchers will administer the fiction and nonfiction posttests and the student self-assessment. These measurement tools, along with student reflections, and teacher researcher anecdotal records, will provide the data to determine the effectiveness of the intervention.

Methods of Assessment

In order to assess the effectiveness of the intervention, pretests and posttests for both fiction and nonfiction selections will be developed. A self-assessment will be administered to the targeted students prior to and following the intervention. Metacognitive reflection instruments will be created to record student progress. Anecdotal records (Appendix Q) will be kept and then analyzed by the teacher researchers.

Metacognitive Reading Awareness Inventory

During the first week of the study, the teacher researchers will collect preliminary data. The teacher researchers will administer the metacognitive reading inventory to determine the students' awareness of various learning strategies. Each question has four possible answers and the students may leave the question blank if they cannot identify with any of the four choices. The students will be instructed to fill out the surveys honestly. The teacher researchers will review the surveys to analyze the results.

After the study has been completed, the teacher researchers will administer the same test. The results of the second survey should indicate that the students are more aware of the metacognitive and cognitive strategies that were taught to them during the study. By making the students aware of various reading strategies, the students will improve their reading comprehension.

Reading Comprehension Pretests and Posttests

In order to measure the improvement in reading comprehension based on the metacognitive strategies being taught to the students, the teacher researchers will administer two types of tests. The students at Site A in Classroom B and the students at Site B will read a short story titled "An Unlikely Heroine" and answer ten multiple choice questions. The students at Site A in Classroom A will read a piece of nonfiction titled "Canada and the United States." The students will not have read either of the two pieces of literature previously. Both of these tests will contain questions to assess the following skills: cause and effect, making inferences, using context clues, finding main ideas, and recalling details.

At the end of the intervention, the teacher researchers will administer two similarly formatted but different posttests. The students at Site A in Classroom B and the students at Site B will read a short story titled "The Disappearing Man" (Pfeffer, 1989, pp.14-29) and answer ten multiple choice questions. The students at Site A in Classroom A will read a piece of nonfiction titled "Mexico, Central America, and the Caribbean." The teacher researchers will administer the two tests using the same methodology as the pretests.

The results from the pretests and the posttests will be compared to determine improvements in reading comprehension. The pretests and the posttests are not the only methods of assessment, but they will provide the researchers with a quantitative measurement of the improvement in reading comprehension based on the metacognitive and cognitive strategies being taught during the intervention.

Intervention Activity and Data Collection Tool Description ~ "The Reflection Connection"

This activity was adapted from the Plus, Minuses, Interesting (PMI) strategy that is purported to increase student reflection on learning to promote reading comprehension, long-term memory, and transfer. The teacher researchers developed their own reflective tool that would focus on reading activities specifically. They felt the word "minus" had a negative connotation that they did not wish to connect with reading.

However, the teacher researchers see the value of the PMI, and its ability to promote student comprehension.

Before the students use the reflection tool independently, the teacher researchers will discuss its elements with them. Then the teacher researchers will read aloud selections to the students, modeling a "think aloud" to reinforce cognitive strategies that good readers use. The teacher researchers will model responses to the questions. Throughout the remaining weeks of the intervention, the students will use this tool in small groups, in pairs, and individually in order to reflect on a variety of reading activities.

The teacher researchers believe the "Reflection Connection" instrument will foster metacognition in their students. As current research suggests, the students will improve their reading comprehension, motivation, and ability to transfer new learning to other subject areas and beyond the classroom. The teacher researchers will analyze this instrument for evidence of growth and record their analysis in anecdotal records.

Intervention Activity and Data Collection Tool Description ~ "Reader's Response Coding Symbols"

In order to stimulate cognitive and metacognitive thought processes, the teacher researchers have deemed it helpful to model and teach the students a series of symbols to use while reading. Use of this strategy will force the students to become more active and metacognitive readers. The coding system will help the students to remember and process the information that they have just read.

The use of these symbols will be taught in conjunction with the instruction of strategies such as skimming, scanning, noting text structures such as titles, subheadings, summary paragraphs and illustrations in the text. These skills and strategies will force the students to become more active readers and to question themselves throughout their reading.

Each teacher researcher will begin instruction of the coding symbols by placing a short reading selection on the overhead projector. As the teacher researcher orally reads the passage, he or she will pause after each paragraph to express his or her thinking processes and to make a notation from the list of symbols. Following this initial instruction, the students will practice the method both in cooperative groups and independently. The lessons will be followed by reflective exercises so the students can process this new technique and the teacher researcher will reiterate the concept that the students are "thinking about their thinking." The ultimate objective of this activity is to make these metacognitive strategies automatic. The teacher researchers will assess this instruction through the use of observation checklists and anecdotal records.

Intervention Activity and Data Collection Tool Description ~ "Reader Response Journal"

Research has shown that improved comprehension and transfer of learning occur when students reflect on what they have just read. One method of reflection requests that the students write about a specific passage following their reading.

The researchers have developed a series of reflective stems to which the students will respond in their "Reader Response Journals." These stems encompass a variety of metacognitive activities. Some stems deal with difficulties the students may experience as they read, while others focus on transfer of learning or specific reading comprehension strategies.

During the intervention, the researchers will choose from these stems following selected reading assignments. Allowing the students to share what they have read through cooperative groups, whole-class settings, or informal interviews with the teacher will further enhance the effectiveness of this journaling activity. Checklists and anecdotal records will be used to record and measure evidence of student progress.

Intervention Activity and Data Collection Tool Description ~ "Using 'think alouds' to Model Cognitive Comprehension Strategies"

Since metacognition is an awareness of and adaptation to specific cognitive activities in order to achieve greater learning, students must be taught specific cognitive activities. Students need to plan, monitor, adapt, and apply specific learning strategies to a variety of texts. Thus the teacher researchers include the teaching of these cognitive activities in their action plan.

Much research points to teacher modeling, through "think alouds," as an effective way for inexperienced readers to understand how capable readers react and respond to text. Good readers interact actively with the written words – questioning, classifying and organizing information, re-reading or skimming as needed. While this seems to come instinctively to some readers, others do not hear their inner voices as they engage in what is known as private speech. The ultimate goal is that the students will execute these strategies independently in both their educational and personal reading activities.

Each teacher researcher will orally read a short, high interest selection during the first week of the intervention. While reading, the teacher researcher will interject comments and questions in a different voice that reflects the cognitive strategies that a good reader uses. Next, the class will discuss the different ways the teacher researcher interacted with the text to find patterns in the process. Over the next several weeks, the students will participate in this metacognitive process in the following sequence: responding in conjunction with the teacher researcher, then in small groups, in pairs, and ultimately independently. They will share their comments both orally and written in the margins of photocopied selections. Ideally, by the end of the intervention, these cognitive processes will have become almost automatic as they read. The teacher researchers will record the effectiveness of this intervention on observation checklists and in anecdotal records.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

Overview

The objective of this Action Research project was to increase the level of reading comprehension and thus motivation to read in sixth grade classrooms. Metacognitive reading strategies were the tools selected by the teacher researchers to promote increased reading comprehension.

Following an assessment of their reading competency through pretests and recorded observations, four distinct metacognitive reading strategies were systematically and sequentially introduced to the subjects. Each strategy was presented and modeled to the students, followed by group and individual practice for a period of about two weeks before the next was introduced. The four components of the intervention included: direct instruction of interactive reading strategies through the "think aloud" model; the use of a written coding system to represent the thinking processes during reading; the use of a graphic organizer, the Reflection Connection, to record the students' interaction with the text; and the writing of reflective journals after reading to enhance long-term memory and facilitate transfer of learning. After introducing each of the four strategies, the teacher researchers integrated all of them over a period of several weeks to practice and reinforce them. In the last phase of the project, the students were reassessed in order to measure the effectiveness of the intervention.

Minor deviations from the original action plan were deemed necessary by the teacher researchers. They discovered that their original goal for the journal entries to address content of the text, difficulties with comprehension, and personal connections to the reading material was too far-reaching and ambitious. They discovered that individual stems could not elicit all three types of responses effectively. Thus the original checklist for this activity proved too broad as well. Thus, the teacher researchers created journal stems that addressed one issue at a time.

In addition, the metacognitive pretest selected by the teacher researchers from an outside source failed to provide a discernable pattern in the analysis of the results. Indeed, the vocabulary on this test proved so difficult that it had to be read aloud to the students. For these reasons, and the teacher researchers growing awareness of effective tool design, they deemed it ineffective as a measurement instrument, and elected to abandon it a post-intervention measurement instrument. However, they did discover that this metacognitive pretest did awaken their students to begin to become aware of and evaluate their own thinking processes as they read, and consequently set the stage for the intervention in the students' minds.

The three teacher researchers carried out the intervention at their respective sites, and have chosen to relate their experiences in first-person narratives in the following section in order to clearly express their observations.

Intervention History - Site A, Classroom A

I informed my students of the intervention at the beginning of the school year and expressed that the goal was to improve their reading comprehension by learning and applying various reading strategies. I explained that they would be learning such strategies from two of their teachers, one focusing on fiction and the other on nonfiction. To alleviate students' anxiety and promote honest feedback, they were told that the tests would not affect their grades, but rather would prove how much their reading had improved from this intervention, ending before winter break.

I believe most of my students saw merit in the pretests, and were taking it quite seriously with a positive attitude. The first test was the "Metacognitive Reading Awareness Inventory." The test language was difficult for students to understand, so I read it aloud and then paraphrased the wording into a more student-friendly language. My students appeared to be answering honestly. There were moments when students would laugh or smirk as they circled their response as if they knew it was not the best answer. During the nonfiction reading comprehension pretest, most students went directly to the test without first reading the selection. They read a question or two, and then searched for the answer or read until they found the answer. Some of these students were also using the glossary. These students appeared confident taking the test in this fashion. A few students read the passage from beginning to end before taking the test, and a few were even studying the visuals. Only a couple times did I find wandering, bored eyes.

At my students' request, following the pretests I briefly shared the overall finding. I reported that most of their peers had either expressed the desire (Metacognitive

Reading Inventory) or had exhibited the need (nonfiction reading comprehension test) to improve their reading comprehension. My students appeared to be genuinely excited about becoming better readers, and viewing their end results.

After selecting twelve of my weakest readers, I began the intervention with the "think aloud" strategy, best understood by students as their "inner voice." I physically modeled my thinking by stepping away from the podium and using a different voice. My students were easily engaged and began to predict my next "think aloud." While modeling "think alouds," I was also teaching and promoting other reading strategies, specifically those particular to nonfiction texts such as: using context clues; paying attention to pictures and charts including the captions; identifying important vocabulary; and reading map keys and timelines to acquire information. Discussions reflected a high level of comprehension following teacher modeling. I eventually invited a few students to "think aloud" as I read, stopping at the end of each paragraph. Students quickly overcame their shyness and began to share their thinking, although increasingly out of turn, which appeared to slightly effect students' comprehension.

Practicing in small groups and pairs was difficult due to the noise level. Many students argued with each other's "think aloud" or point of view. While arguing was not a desirable effect, it did promote highly engaged discussions. I addressed this issue by stating that it was not necessary for all group members to share the same point of view, and while I encourage them to share their thinking, it must not distract them from the task at hand. Some students struggled because they were under the misconception that there had to be a "think aloud" for each statement. Students realized that the "inner voice" does not work on demand, and that one must be aware of it and listen to it. For some students, "thinking aloud" on maps, charts, pictures, and captions appeared very natural in comparison to the text. While overall comprehension was average in groups and pairs, it greatly increased when students worked independently. Students began to make inferences and were using their own voices. Since students could not write their thinking in their texts, "Post-Its" were too costly, and transparencies would have been too messy, I decided to have students record their thinking using a T-chart. Some students complained that they would have to write, and others found it difficult to stop and record their thinking on a separate sheet of paper. Those students would then fill in the chart after reading larger portions of the text. While the T-chart not being the best tool of measurement, it did provide a satisfactory glimpse into students' independent thinking (Appendix R).

After a brief and simple introduction to the second strategy of coding, I began reading a nonfiction selection from the overhead, pausing after each paragraph. "Think aloud" were used to encourage transfer and to give reasons for my choice of coding, and I found students eagerly volunteering to do the same. Students were fascinated that they could code based on their true feelings, for example, "B" for boring. Highly engaged, students asked to create their own codes, "C" for cool and "W" for weird. I was overjoyed to see such a high level of student participation, motivation, and comprehension.

In an attempt to reduce the noise level, coding in small groups was performed in the same fashion with the teacher reading the selection aloud. It was a similar situation to the "think alouds," with student disagreements, yet an overall good level of comprehension was observed. As they were clearly grasping this strategy, I directly moved students to working independently. Students used the symbols effectively, and while intrigued by the "boring" code, I found them not to overuse it. I was captivated when students made the request to integrate the strategies I had taught earlier as well as those taught by my fellow teacher researcher such as boxing vocabulary words. Excited by this evidence of transfer, I agreed to their request, but told students that they still needed to focus on coding as it is important to become familiar with all of the strategies throughout this intervention. In doing so, they will take with them a larger bag of "tricks" to be used as they see fit.

The next step of the intervention was an explanation of the third strategy, the Reflection Connection, a graphic organizer or chart to record their thinking. Students pointed out that the "Cool" category would help them recall what was important or information that they had found interesting, and that the "Confusing" category would help them realize what they did not know. The "Connections" category, where students had to make a connection to something outside of the text, required further explanation. As students worked through the Reflection Connection form with me, I found most of my students volunteering to share their thoughts for all except the last category. Students appeared to understand my modeling of the "Connections" category, however when asked, few students shared their own connections.

After hearing many students complain about having to learn and practice some of the same strategies in two of their classes, I attempted to increase their level of interest by having students complete a Reflection Connection form in small groups on a high interest video from our drug unit. This appeared to work as students began making connections, realizing that that the "Cool" category was similar to an "Oh…" or "Wow…"

"think aloud," and that the "Connections" category was similar to a "made me think of..." or "reminds me of..." statement. There was evidence of higher order thinking, and students made many personal connections and had in-depth discussions. Performance, whether working in pairs or independently, was of the same caliber (Appendix S). A few students were reluctant to elaborate on the chart and complained about having to write.

Students had found the reader's response journal, our final strategy, similar to the "Reflection Connection" form. Students seemed to understand how to respond to the journal stems, except for the subheading, "comment on your thinking." Some students best understood it as "explain your answer." Students were not comfortable after the first modeling, so I modeled a second time using a more high interest stem. Although students appeared more at ease with the second modeling, some students were still unable to address all three subheadings.

There was much improvement after practicing the journal writing in groups and in pairs. Students were referring to the text and making authentic connections (Appendix T). However, students required prompting to "comment on their thinking." I had students think of a psychiatrist saying to their patient lying on the couch, "Hmmm, can you explain yourself?" or "Why do you think that?" This visual seemed to help some of my students, so I began to prompt students, using a funny voice, and asking them the "psychiatrist's questions." Students found this amusing, but most importantly, it did seem to help some students. As I had seen before, students often had arguments when they did not agree with each other's point-of-view, and some students complained about having to write.

As reading strategies were practiced during the latter phase of the intervention, we noted minor problems with the strategies, and how students were making personal adaptations of them. Many students began to show their personal preference of strategies and began to integrate them on various assignments, adapting them to fit their own needs. For example, one of my students preferred to use a combination of coding, "think alouds," and boxing important vocabulary as she read. Students were also found using strategies when not required and outside of the classroom. "If we had reading homework and we didn't have to code, I would do it to understand better," one student commented.

"Think alouds" and coding were preferred by most and were often combined with other strategies. Although students found recording their "think aloud" in the text to be ideal, it was not always possible. Many students learned to "think aloud" without writing by simply paying attention to their "inner voice" while reading. One minor problem arose, as I found some students overusing the cool and weird codes on required coding assignments. Students admitted it was either out of sheer laziness, or they were trying to make it appear as though they had read. So for many assignments, the number of C's and W's allowed were limited.

The Reflection Connection forms continued to improve, but for some students completing the "Confusing" category was still difficult. Students stated that they simply didn't have any questions. I also discovered that the subcategories for journaling did not always work with every stem. Therefore, I no longer made my students strictly adhere to them, and subheadings were to be used as guidelines or prompts.

Furthermore, I noted an increase in the motivation to write if students had a choice of journal stems.

My students were anxious to take their posttest for a couple reasons. The obvious being that winter break was approaching, and the other being that my students were simply growing tired of the activities and looking forward to the conclusion of our intervention. My students were again complaining about having to practice these strategies in two of their classes. I believe part of this was attributed to the fact that many of these strategies were now automatic for them, and they did not see the value in having to physically record them. Consequently, my students were not nearly as motivated to take the posttest as they were to take their pretests. After a pep talk, the majority of my students perked up and was ready to see this through. I also made photocopies of the reading so that they could easily apply their strategies. The majority of my students read the entire reading selection before taking the test, and had integrated various reading strategies learned. There was one student who took the test by searching for the answers rather than reading the passage as a whole. When asked about this he said he was tired.

Intervention History – Site A, Classroom B

My pre-intervention assessment began with my observations of my students' silent reading behaviors as well as their own self-reporting of their reading attitudes and practices. I noted many behaviors that did not reflect a motivation to read or evidence of their absorption in the text. It took nearly five minutes and several verbal cues in order for the group as a whole to settle down to read during Sustained Silent Reading (SSR). I observed fidgeting, squirming, looking around the room instead of at the books, and tapping and handling of objects such as pencils in nearly three-fourths of the students. It appeared that about one fourth of them never became engaged in their texts for more than one minute before becoming disengaged during SSR. On another occasion, I asked the students to share their feelings about reading. One of the students announced coldly, "I *hate* reading!" Several whole-heartedly agreed. When I asked how many had read any books over the summer, only about one-third reported that they had. Most had not visited the library and only half reported that their families regularly read any newspapers or magazines. Most disconcerting was that they seemed almost proud of their negative attitudes.

My observation of their reading behaviors during the comprehension pretest almost mirrored these findings. Of the group, about one-third quickly opened the books and settled in the reading process after listening to the directions. This group looked over the entire test and looked through the text before beginning. Hunched over their materials, they appeared absorbed in the text and when answering questions looked back and appeared to skim the text for answers. Another third of the group exhibited strikingly different behaviors. They sighed and rolled their eyes during directions, looked to see how long the selection was, but did not preview the test or text. Difficulty in concentration was apparent by their shifting in their seats, looking about, and shuffling their materials. One boy stopped reading the story about two-thirds of the way through, and just quickly answered the questions. Another assumed almost a fetal position as he curled up around his desktop. He never stayed focused for longer than thirty seconds. This fraction of the class did not skim the text to seek out answers, but remained glued to the test. The last third of the class exhibited behaviors that were between the two extremes of the other two groups, except that they seemed to be monitoring the progress of the rest of the class more frequently.

As stated in the Action Plan, I also administered a self-evaluation of which metacognitive reading strategies my students felt they used. I quickly realized that the language in the test itself, which our research team had found in the course of our preintervention research, was too difficult for my students. Thus I had to read aloud the test to them and explain the difficult vocabulary, after which they responded. What seemed like a useful measurement tool, now seemed to be a case of good intentions that were not working as we planned.

After grading the pretests, I selected twelve students upon which to focus my research. I selected subjects who showed evidence of poor comprehension as measured by the test as well as from my observations and self-reporting of their behaviors. I chose a balanced groups of males and females, recently enrolled and long-time students of the school, and Whites and Hispanics, but not bilingual instruction students.

The first stage of the intervention was to model the reading strategies that competent readers use during the reading process through a "think aloud." The students as a whole seemed intrigued by the prospect. Earlier I had prepared for the activity with a short fictional story by writing comments and questions in the margin of the text as a "script." I included predicting plot events (followed by affirming, refuting, or amending them), asking questions, commenting on characters, determining meaning of vocabulary in context, rereading of confusing text, and making personal connections to the text. I decided not to give the children a copy of the text, so that they would have to focus on the entire process instead of the text itself. After explaining my purpose I began. The students quickly became engaged in the activity, and soon they were actually joining me in my interactions with the text. I hadn't expected that, but as long as their comments were not disruptive to the process I allowed them to help me model. At first I tried to use two different voices to distinguish the text from my thinking, but soon instinctively touched my fingers to my temples when I thought aloud. The kids followed my lead. Half way through the story, one student yelled out, "I *love* this brain-reading stuff!" Thus my students' nickname for interactive reading through the "think aloud" model was born. After I finished my reading and interaction of the story, I "tested" their comprehension by asking some questions about the story –some factual, some inferential, some obscure. They were able to respond thoughtfully and correctly to them.

Next, the students practiced interactive reading strategies through "think aloud" in small groups. They would take turns reading aloud short selections, and comment and question as they read. I moved from group to group quietly observing and recoding their thoughts and actions. I heard them questioning the text, predicting, discussing vocabulary and characters, and rereading text that was confusing. I heard them make personal connections to the text such as, "I've read one of these stories before!" All of the groups, albeit in varying degrees, interacted with the text. Some of the groups needed some prompting in the initial phase, but all seemed connected to the text. I completed this stage of the intervention by having the students individually read and record their thinking on paper. I prepared general questions, such as "Make two predictions as you read" in order to focus their responses (Appendix U). I encouraged them to jot down their thoughts without worrying about spelling, cursive writing, or grammar in order for them to be spontaneous and original. After reading and writing, I would encourage them to share some of their comments. The question that seemed to promote the most discussion and level of participation involved their personal connections to the text. Even those students who appeared to be the least engaged in my earliest observations were participating in the discussions of the text and obviously showing comprehension of what they had read when they could relate it to themselves in some way.

The next phase of the intervention was to introduce a written coding system to record the students' thinking processes as they read. First I passed out a sheet that described the various symbols. Next, I put a story on the overhead projector. I uncovered one paragraph at a time while I read aloud and modeled my interaction with the text. As I read and commented, I wrote the appropriate symbols on the margin of the text. Soon the students began to join in with me as I ascertained which symbol a particular passage necessitated. They picked up the new technique very quickly when it was modeled for them. I found it noteworthy how smoothly and naturally the coding process built onto the reading strategies "think alouds."

Next, the students practiced using the coding symbols themselves, first in groups and then independently. At first, some of the poorer readers seemed to be fascinated with the "B" (boring) symbol. It was almost as if they felt empowered to say they didn't like what they had been required to read. Then when we began to share comments, they began to get more involved, and even began to add some symbols of their own to the list, most notable "C" for "cool." They also added happy and sad faces to represent emotions. They began to see that the process could be adapted to fit their own needs as readers, and they added comments and questions to the coding.

The next step of the intervention was to engage the reflective aspect of reading comprehension through a graphic organizer, the "Reflection Connection," adapted from the PMI, which was developed for this intervention. Students comment on what was "Cool," and "Confusing" in the text, and then make personal "Connections" to it. The introduction of this activity did not go as smoothly as the others had. The other teacher researcher at my site had begun this step of the intervention a day or two sooner, and several students complained that they already knew how to use the tool. I decided to spend a little more time than I had planned explaining the purpose of the instrument and it seemed that because of their success with the first two steps of the intervention, they became more open to giving this a chance too. What really helped was the story I had selected was a very multifaceted one. At first, the characters seemed very one dimensional and the story almost sentimental, with the father of a farm family saving the life of a beloved pig destined for the Thanksgiving table. But upon completion of the Reflection Connection and the subsequent discussion, it was apparent that the story was more complex that it had seemed at first. Now the value of the instrument became clearer to the students and they more motivated to use it.

Next the students practiced using the Reflection Connection after brain reading and coding assigned texts. I found that it did not work well when the students tried to complete the graphic organizer in small groups, because each student's interpretations of the text varied so greatly. Much more effective was when the students read and filled out the Reflection Connection form independently (Appendix V) and then shared their results with a small group or with the whole class. On the whole, they agreed most on what was "cool" in the story. Sometimes they found the same ideas or passages "confusing," but not always. Obviously their personal connections varied the most. It was these personal connections that they most enjoyed sharing with the class, so what began as an almost hostile start to this phase ended quite positively.

After reviewing the first three steps of the intervention, with the children composing essays describing what they had learned, I began the last phase of the intervention, which was writing journal responses after reading. In response to the description of two characters in our novel, *Pleasing the Ghost*, by Sharon Creech, as a group we composed a paragraph in response to the question "What do Billy and Dennis have in common?" Because of the nature of the journal stem, with the responses easy to access in the text, the activity went well. In fact, the students discerned some ideas I hadn't even considered before.

When I tried to have them compose a journal response in a small group, the results were not as positive. Once again, as with the Reflection Connection, personal differences made journaling an activity that did not work well in a small group setting, as we had hoped would be useful when we developed our Action Plan. When students wrote on their own, the results were much better. Their writing was often poignant and eloquent, especially when making personal connections to the text.

Another problem surfaced in our design of the journaling form itself. Initially, we had hoped the students would be able to respond to the text, comment on their thinking, as well as make a personal connection. Unfortunately, that proved to be too much for them to accomplish. Instead, the journal stems themselves needed to address one of these components at a time, and then the students could respond effectively.

Over the next several weeks, I integrated all four steps of the intervention as we completed a unit on Greek mythology. The students were quite adept at the interactive "think aloud" strategies and the coding became almost second nature for some. Classroom discussions were lively, and the students were showing strong evidence of comprehension. The students were quick to respond to the Reflection Connection, but too much journaling seemed to be almost counterproductive. It seemed that writing about their reading processes had become a chore for them and was sapping their motivation. For some students, composing their ideas into words was difficult and didn't necessarily mean that they didn't understand what they had read. Orally, they could share ideas that demonstrated their comprehension of the text.

I was eager to administer the comprehension posttest as the intervention came to an end. I was sure that from my observations of the students' participation and reading behaviors that it had made a difference in their motivation and participation, but I wondered if the objective results of the test would also prove that the metacognitive interventions resulted in higher scores. During the test itself, there was far less fidgeting and other off-task behaviors than during the pretest and fewer negative comments on their part in response to the announcement of a "test." In fact, several students asked if they would learn the results of their tests because they really wanted to know if their reading had improved the way they felt it had. The students as a whole were quick to settle down to the reading and test. The student who hadn't read the entire text for the pretest did so this time. The student who had curled up at his desk during the pretest assumed a far more natural posture this time. I observed most of the students looking back into the text for evidence to support their answers, rather than just staring at the test as some had with the pretest. Very few of the students looked around the room to monitor the others' progress, but stayed on task and completed the activity at their own pace. With these positive observations in mind, I wondered if the objective posttest results would also improve.

Historical Description – Site B

I administered my pretest to use as baseline data for my intervention. The majority of the students completed the test early and all of the students finished the test on time. Most of the students read the story first before they answered the test questions. Very few students seemed to have difficulty with the test and no one had any questions during the test.

During the first week of the intervention, I conducted my pretest and passed out permission slips. I selected twelve students randomly to report their results in order to measure the success of my intervention strategies. I was unable to do any intervention strategies during the second week because there was a national disaster and the children had difficulty focusing on reading. I was only able to give the students the metacognition survey during the second week.

During the third week, I introduced the first intervention strategy called "think alouds." I modeled the think aloud strategy with the students first before I had them do it. I read a chapter of a novel out loud and I told them what I was thinking while I was reading. Even before I told the students to get involved, some of them raised their hands and told me something about the characters, or predicted something that would happen while I was reading. During the fourth week of the intervention, I added a component, which was not featured in our original action plan, to increase metacognitive reflection and to help the students think aloud. I had the students write down new facts and questions on a "New Information and Questions T-chart." One of the mothers told me that her daughter, who was a struggling reader, knew the novel really well because of the New Information and Questions T-chart (Appendix W).

After one day of modeling "think alouds," I had the students tell me out loud what they were thinking while they were reading. Then I broke the students up into groups and had one student in each group record the thoughts of their group. I noticed that the students were very vocal when they read as a class, but they were very quiet when they read in their groups. The students would wait until they were done reading, and then they would tell the recorder what they were thinking. In some cases, some of the students would not tell the recorder anything that they were thinking. The thinking aloud process proved to be more successful when I would do it with the class as a whole group. One of the parents was very excited about my project and she told me that she would like to see my results when my project is over.

After we used "think alouds" for our reading discussion, I introduced the metacognitive strategy called coding during the fifth and sixth week. I showed the students how to make the coding symbols in the margins and to make a symbol based on what they were thinking while they were reading. One of the parents called and asked me to explain my intervention strategies so that he could use these metacognitive strategies with his daughter at home.

I didn't have to model coding for very long because my students picked up on it rather quickly. We coded various short stories and articles, which were both fiction and nonfiction. The students appeared at ease with the coding process. One of the students suggested that we add the letter "E" for exciting. Towards the end of the week, they were happy when I told them that we were going to code. Discussion was very good on days when we would code because students could refer to specific areas in the text that they agreed with or found confusing. I also noticed that certain students, who rarely participate, raised their hands to ask a question or to make a comment. One of the students made a connection when she brought in my name spelled out in hieroglyphics.

The coding letters that sparked the most discussion were "A" for agree and "D" for disagree. The students liked to find things in the text that they agreed with or disagreed with and discuss these things with the class. For example, one day we were reading a story about canoeing in which a father tried to beat the storm in his canoe. We had some great discussion because some students thought the father was irresponsible for trying to beat the storm, while others thought he made the right decision. The students seemed more willing to discuss their viewpoints with each other because they had something in particular that they liked or disliked.

After two weeks of coding, I introduced the Reflection Connection form during the seventh and eighth week of the intervention. After we read a story, I modeled for the students how to fill out the forms based on what they liked, what was confusing, and what connections they could make to their own lives. One of my slower students made a connection between an example I gave in class and a television show that was on another night.

The students filled out the Reflection Connection forms for chapters of novels and short pieces of fiction and nonfiction. The students did not have any problems telling me what they liked, but some had difficulty with making connections. Occasionally, the students would make some very good connections. Occasionally, the students would make very good connections (Appendix X). One student said the character reminded her of herself last year. We would fill out the reflection connection forms about twice a week for a chapter or a short piece of non-fiction.

Our final component of the intervention was the Reader Response Journals. I modeled for the students how to choose one of the stems and make as many references to the text as they could. I chose one of the stems and did a sample journal entry for them.

After I modeled the Reader Response Journal writing, I had them write in their journals. They wrote in their journals twice a week for about two weeks on novel chapters, short stories, and pieces of nonfiction. One of the students who usually sat in class with his book closed began been reading along in class and participating. The journal stem students liked the best had asked them to rate the story and explain why they would give it that rating (Appendix Y).

The students continued to write in the New Information and Questions T-chart when they would read for homework at night. During class I could ask the students about something they read, and many hands would be raised. Even some of the students who rarely participate would also raise their hands. They had something written down in front of them so they had something to say. One of the students asked if she could take some books home to read.

For the rest of the intervention, I integrated all four of the strategies into my daily lessons. I placed a particular emphasis on using "think alouds" and coding. The students really seemed to enjoy coding so I would find various newspaper clippings and Xerox short stories so they could code them. The novels belong to the school so we could not write in them. When we used the New Information and Questions T-chart in conjunction with "think alouds," discussion was very lively. One day in class, we covered all of the material and everyone participated well. The students told me that it was a very good class that day and they had fun. These strategies encouraged many of the quieter students to participate in class and the students seemed to better understand the stories that they were reading. Parents were telling me that their children enjoy reading class very much and the students were doing very well on tests and quizzes.

After I integrated all of the strategies, I noticed that the students improved on making connections between the stories and other things. Some students made connections to television shows, books they read, or family members. The students would share these connections with the class when we discussed the stories and completed the Reflection Connection forms.

Toward the end of the intervention I decreased the amount of journaling that I did because the students seemed to be growing tired of journaling. The Reflection Connection forms seemed to accomplish the same desired purpose and the students responded better to the reflection connection forms.

During the final week of my intervention, I had the students write about which strategies they liked the most and why they liked them. I also administered my posttest. The students wrote that they liked using "think alouds" the best. The students liked "think alouds" because they could hear what other people think about the story and because it helped them understand the story. The students liked coding because it helped them focus on specific pieces of the story and it allowed them to write while they read.

When the students took the posttest, to determine their growth as a result of the intervention, I noticed that some of the students were checking over their answers. Most of the students finished early and none of the students had any questions about the test. The students did not have to be told to stay on task. Most of the students read the story first before they took the test.

Presentation and Analysis of Results

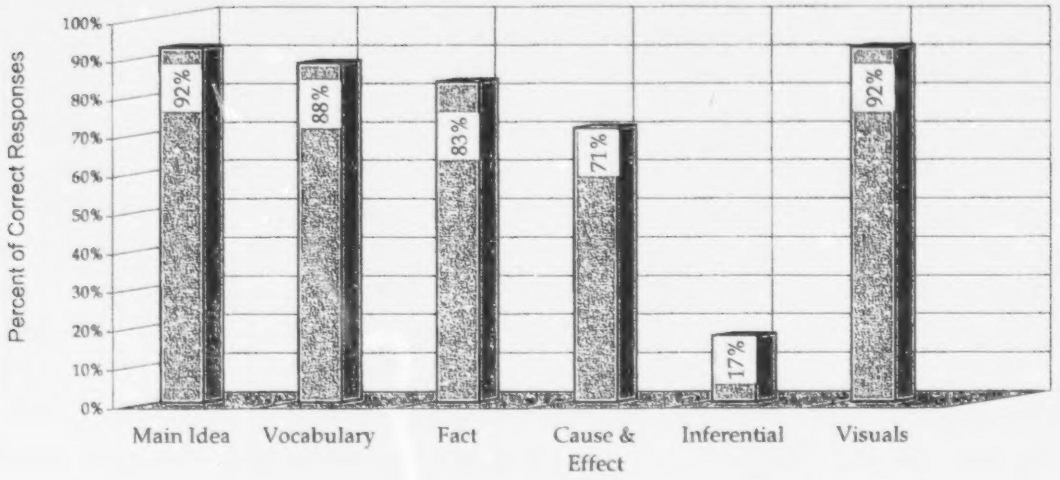
Site A, Classroom A – Statistical Evidence

The overall results of the posttests were positive, as seen in Figure 10 (Appendices D and Z). Inferential questions went up twenty-five percent, cause and effect questions went up by twenty-one percent, and factual questions went up by twelve percent. The percentage of questions answered correctly requiring the use of visuals remained the same. Identifying the main idea went down thirty-four percent, and vocabulary questions went down twenty-one percent.

Figure 10

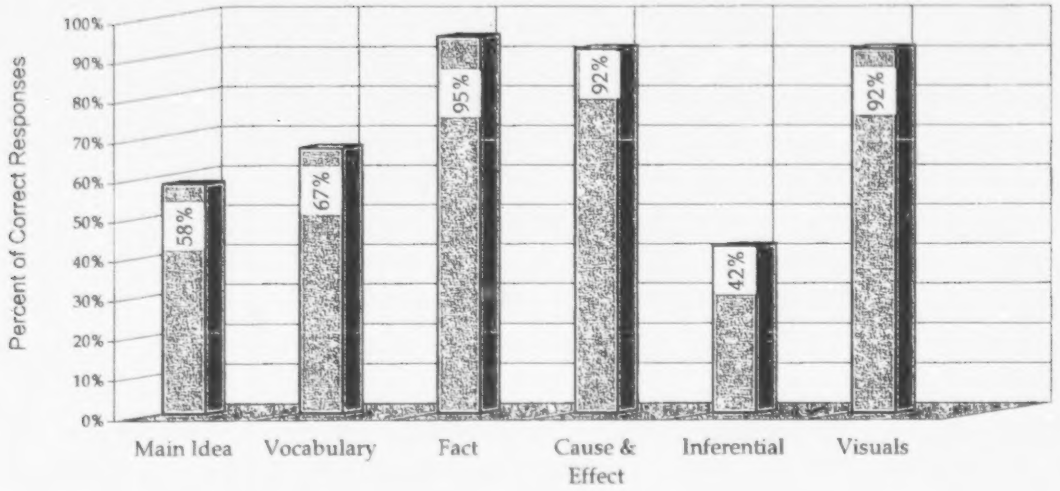
Results of Site A, Classroom A Pretests

n=12



Results of Site A, Classroom A Posttests

n=12



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After further examination of the main idea and vocabulary questions, the teacher researcher found both the questions and answers to have complex language. This may have contributed to the decline in the percentage of correct answers . Upon reviewing the incorrect responses of these two categories, it appears as though students may have chosen the first reasonable answer without reading all of their options. The teacher researcher also decided to accept answers "a" and "b" for question ten since the answers were somewhat similar, and required students to make inferences based on relatively vague information. The increased scores in the fact, cause and effect, and inferential questions may be attributed to the fact that these types of questions are routinely addressed in nonfiction texts, which was the focus of this teacher researcher's intervention.

Site A, Classroom A – Anecdotal Evidence

The teacher researcher had witnessed tremendous growth throughout the intervention evidenced by classroom discussion on various reading assignments in which there was both a high level of student participation and comprehension. As students became fluent in using the reading strategies, coupled with being more consciously aware of their strengths and weaknesses as readers, many were able to decide for themselves which strategies to employ for a particular reading selection.

In order for students to fully comprehend the various reading strategies, teacher modeling was paramount. In addition, high interest reading selections appeared to increase students' motivation to both learn and practice the strategies. For the most part, practicing the strategies in groups and pairs were problematic due to the noise level and because the strategies are subjective in nature. Nonetheless, when it came to independent practice, most students appeared confident, focused, and most importantly were comprehending what they had read. This specifically applied to many of the struggling readers. They remained determined no matter how long it took them to complete the reading. On the other hand, the reluctant writers were not nearly as motivated when it came to the writing activities. Such students often complained of having to write and gave very short responses.

Throughout the intervention, students were found to transfer various reading strategies to other content areas and outside of school. Students were also noted to be very excited about making connections and would often share their connections whenever they realized they had one. On occasion, students found making connections difficult with certain nonfiction reading selections.

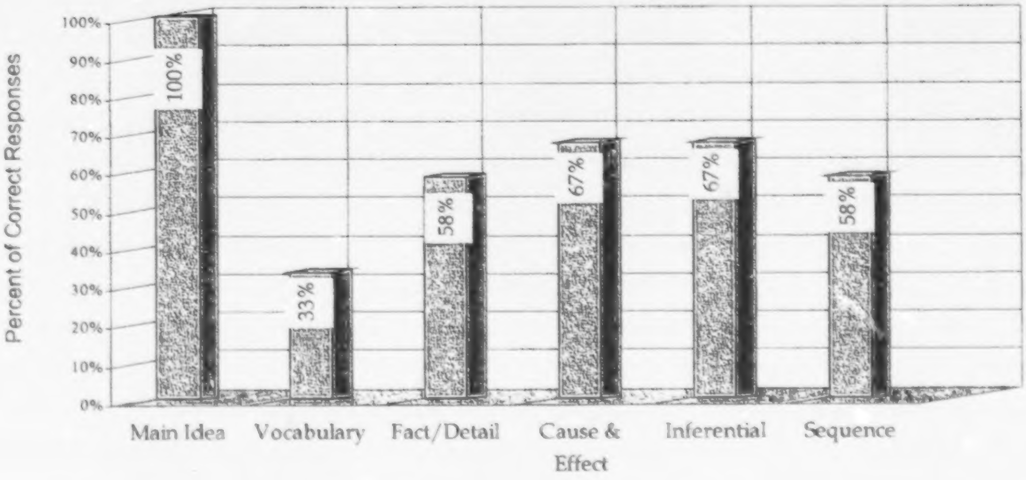
Toward the end of the intervention, students reported that their strategies were becoming automatic which was the teacher researcher's ultimate goal. Consequently, students became increasingly annoyed by having to record their thinking and appeared strikingly less motivated. Nonetheless, an examination of the entire intervention revealed that the activities did indeed promote a higher level of reading comprehension.

Site A, Classroom B – Statistical Evidence

The teacher researcher administered the comprehension posttest. The population tested dropped by one student because one of the subjects, a student new to the school in the fall, was determined to have a learning disability and began to receive special education services. Examination of the results of the comprehension posttest revealed that the students in this classroom, in general, showed an improvement in comprehension following the intervention as seen in Figure 11

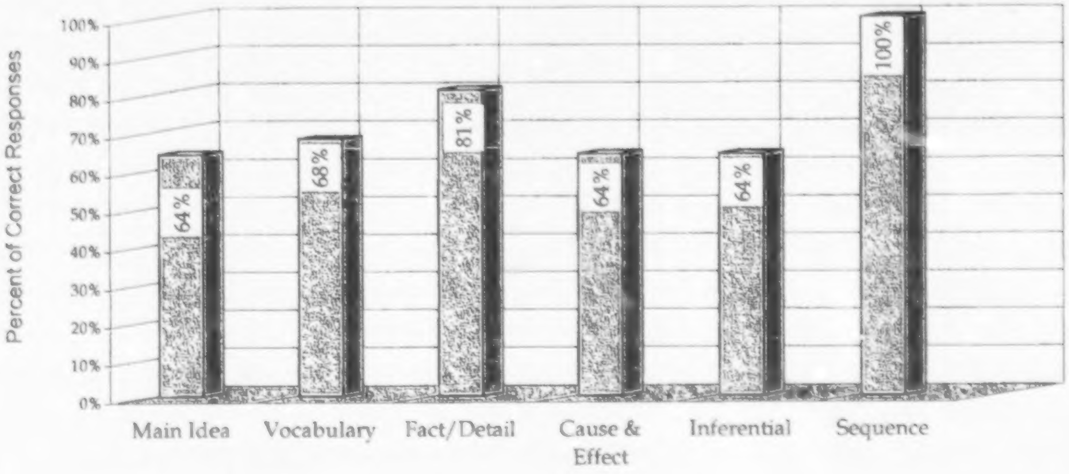
(Appendices E and AA). However, the improvement was not consistent for every type of question. For example, the number of inferential questions answered correctly dropped by two percent from 66% to 64% correct. Correct main idea questions, in fact, dropped from 100% correct to 64%. The other categories all showed improvement, some rather dramatic. Correctly answered cause and effect questions rose from 41% to 64%. Sequence questions increased from 58% to 100% answered correctly. By far the greatest impact was made on vocabulary and factual questions, with vocabulary increasing from 33% to 68% and factual questions jumping from 33% to 81% of correctly answered questions. So while every category did not show the same level of improvement, the teacher researcher was able to report significant gains in the subjects' reading comprehension as measured by the objective posttest.

Figure 11



Results of Site A, Classroom B Pretests

n=12



Results of Site A, Classroom B Posttests

n=11

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Analysis of the results would seem to indicate that this particular group of test subjects showed the greatest improvement in areas of reading that involve direct interaction with the text. They were much better at recognizing the places in the text where facts could be substantiated and the order plot events took place. They knew how to explore the context in order to determine the meaning of vocabulary words. The group may have gone down in the main idea category due to the wording of the possible choices, with two responses being similar, except for the addition of a short phrase. Perhaps they were overly confident and did not take the time to read each response thoroughly. Questions that relied on the students to use more critical thinking and reasoning, such as the inferential and cause and effect questions, did not increase as dramatically, although these scores were not as low in the pretests to begin with. This may indicate that while the intervention did improve reading comprehension, more direct instruction, modeling, and practice of these types of questions would be useful. The data does seem to indicate that the metacognitive intervention did result in an overall improvement in reading comprehension among the research subjects.

Site A, Classroom B – Anecdotal Evidence

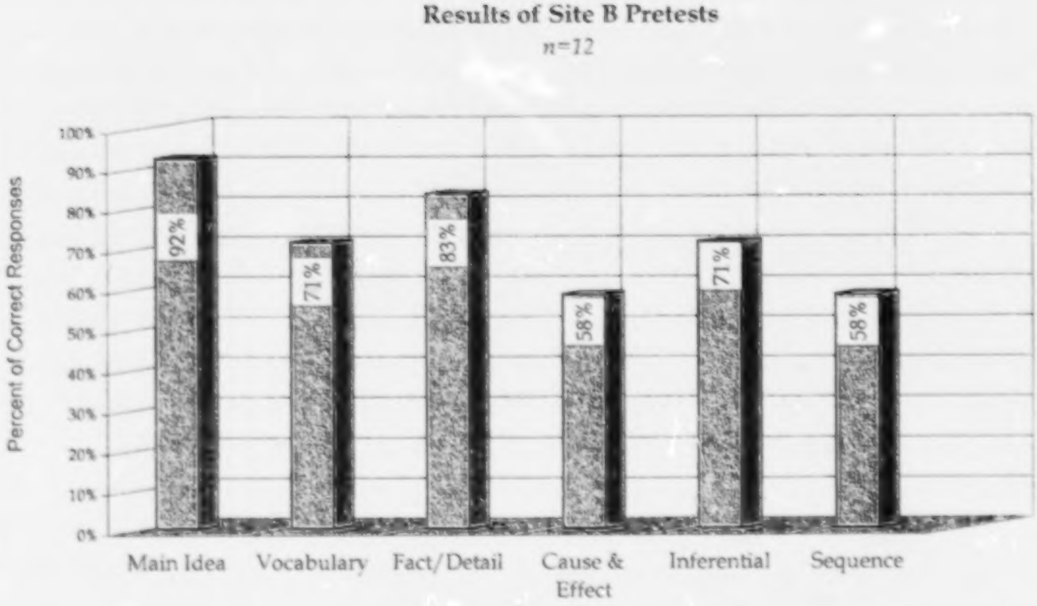
Over the course of the intervention, the teacher researcher observed a change in reading behaviors and classroom participation that indicated an improvement in reading motivation and comprehension. Students appeared more focused and purposeful when reading silently. Individual class participation in discussions was higher and the students gave more inferential, critical comments on the texts, rather than just noting the facts. When the students completed lessons from their vocabulary program, many coded and wrote comments and questions on the text without being required to. When they began to read other novels, several students voluntarily purchased their own copies so they could write on the text. The students began to transfer these strategies to other classrooms, and reported connections they noted between subject areas. Some were very eager to share connections between their lessons and their personal lives. "That's a *connection*!" was heard frequently during discussions.

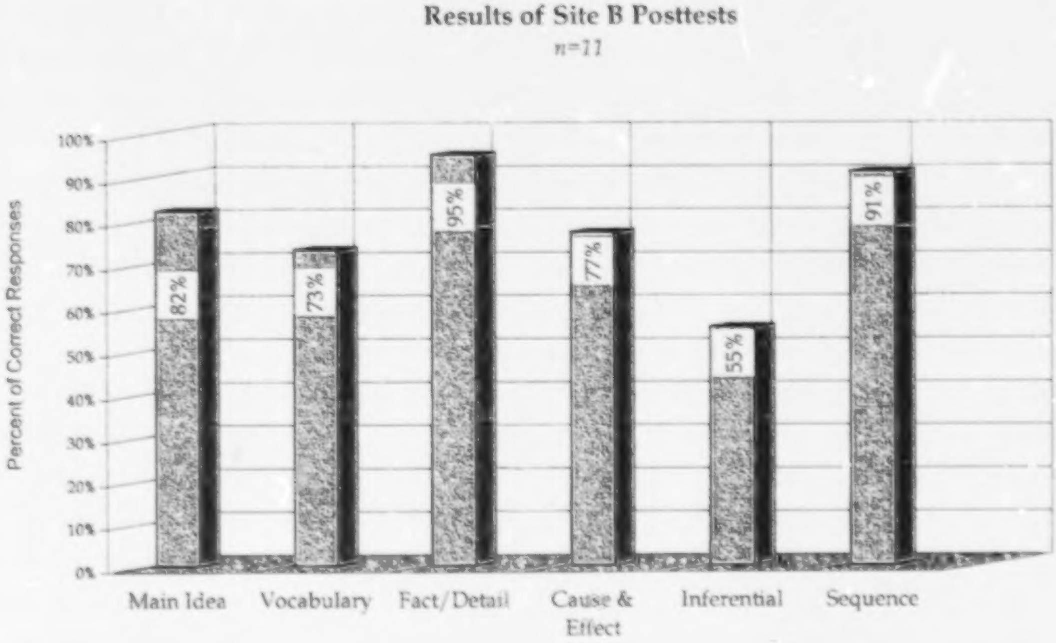
The activities in the intervention increased comprehension as demonstrated by improved classroom participation and test scores in all levels of readers. The most capable readers were quick to adopt the terminology and practices. They reported that they had instinctively used some of the "think aloud" strategies before, but now felt they had an awareness of what they needed to do when they read. Average readers were more likely to volunteer during classroom discussions and reported feeling more confident about their reading abilities. The weakest readers showed a marked increase in attending to the text when they had to read silently, completed at-home reading assignments more frequently as demonstrated by their classroom performance, and volunteered more frequently during class discussions. Ironically, the girl who had announced at the beginning of the intervention that she had hated reading was now one of the most eager respondents in class discussions, and was visibly upset if the teacher researcher would call on someone else as she frantically waved her hand, hoping to be called on so she could share her thoughts.

Site B – Statistical Evidence

Based on the results of the pretest and the posttest (Appendices F and BB), the teacher researcher was able to ascertain the following information. The population that was tested decreased by one student because this student transferred to another school. The data indicated that the students' scores improved overall as a result of the intervention. This increase, however, was not consistent in all of the categories. For example, the students' scores decreased slightly, from ninety-two percent to eighty-two percent, in the category of main idea questions. The students' scores decreased from seventy one percent to fifty-five percent in the category of inferential questions. This reflected a sixteen percent decrease in scores. Despite the decrease in main idea and inferential questions, the students' scores improved greatly in the categories of cause and effect questions and sequence questions. The students' scores improved in four out of six categories but the most significant categories were sequence questions and cause and effect questions. The students' scores increased thirty-three percent, in sequence questions, from fifty-eight percent to ninety-one percent. The students' scores also improved noticeably in the category of cause and effect questions. The scores improved from fifty-eight percent to seventy-seven percent, resulting in a nineteen percent increase. This increase in the scores overall seemed to suggest that the intervention strategies were successful and the students understood and implemented them.

Figure 12


Results of Site B Pretests
n=12


Results of Site B Posttests
n=11

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The teacher researcher attributed the drop in inferential questions to the fact that one of the questions had a more than one correct answer. Consequently, the students were unaware of which answer was correct and chose different answers. The teacher researcher attributed the decrease in scores of the main idea question to the fact that one answer, correct in the beginning of the story, was no longer correct at the end of the story. If the students answered the questions as they read the story, they believed that another choice was the correct answer. The main idea question was the first question on the test, so the students might have thought that the answer was in the beginning of the story. The increase in cause and effect questions indicated that the students mastered cause and effect. The instructional method using real-world examples seemed to help the students transfer cause and effect to reading. The students improved in the area of detail questions. Perhaps the coding process forces students to pay particular closer attention to facts and details. In conclusion, the metacognitive strategies that the teacher researcher introduced into his classroom improved his students' reading comprehension. These strategies allowed the students to better understand cause and effect, sequencing, details, and vocabulary.

Site B – Anecdotal Evidence

When the intervention began, the teacher researcher at site B noticed that some of the students did not open their reading books in class and had trouble following along. Some of the students did not participate in class and rarely asked questions. A few of the students were struggling in their other classes as well as reading. Some students did not like to read and appeared bored and uninterested in class.

As a result of the intervention, the students who appeared bored and uninterested began to participate in class. The students who rarely raised their hands began to ask questions about things. Some of the students who were struggling in their classes began to improve in reading and their other classes as well. One student who rarely had a book in her hand asked the teacher-researcher to borrow some books to read at home. One teacher told the teacher-researcher that the students made connections in her class. When the teacher-researcher brought a play to read in class, nearly all of the students wanted a part in the play.

Conclusions and Recommendations

Based on the comprehension posttests, as well as the anecdotal records of the teacher researchers observations of class participation and level of discussion of the texts, the students in all three classrooms at both sites demonstrated an improvement in reading comprehension following the intervention.

The metacognitive strategies and tools appear to have not only improved comprehension, but seemed to have increased motivation to read and led to more efficient reading behaviors as well. The students exhibited more self-confidence in discussions of the text, and showed greater understanding of selections assigned for homework that they had to read independently.

Each of the four components of the intervention varied in its purpose and its effectiveness, and while all were useful, each element could be introduced independently or integrated as was done in the intervention.

By far the most critical and effective element of the intervention was the modeling of interactive reading strategies through "think alouds." The teacher researchers feel this type of modeling is essential for those readers who simply do not know how a competent, efficient reader processes text. Too many simply decoded one word at a time without seeing the complex interrelationships of ideas within the text that accompanies true comprehension. Too many had no awareness of their comprehension or lack of it. By teacher modeling of these strategies, and drawing students into the process, they can develop the techniques and skills that will empower them as readers.

The coding process is also beneficial because it almost forces the readers to stop and process what they are reading in order to designate symbols that represent their thinking. This dovetails quite effectively with the modeling of strategies because the same thinking and processing skills can be addressed. Coding increased discussion levels because students had tangible marks to help them locate specific areas of the text they wanted to address. Coding also provides a helpful means to study and review material.

One pitfall of coding is that students cannot always write directly onto certain texts, such as library or school-owned texts. Photocopying or purchasing of texts is not always financially feasible. Sticky notes or notebooks could be used to adapt the process. Writing in pencil, which could later be erased, is another option.

The teacher researchers do recommend teaching the coding process because it truly necessitates the practice of interactive reading techniques. Even if it is practiced for a period of time, the thinking processes that precede the actual coding appear to become a habit, and the actual coding itself almost a secondary concern.

The use of a simple graphic organizer, such as the Reflection Connection, which was developed for this action research intervention, to record reflections after reading is also recommended. It allows for personal connections and interpretations of the text that seems to lead to a greater motivation to read and to more lasting retention of information. This instrument also provides a concrete place to begin classroom discussions of the text and encourages less confident readers and speakers to share their ideas. In time the three components of the graphic organizer, (what was *cool* and *confusing* about the text, or their personal *connections* to it), become an instinctive afterthought following reading, and need not always be written down. This type of graphic organizer could also provide teachers with a quick, informal assessment tool to monitor comprehension and completion of reading assignments.

Using reflective journaling following reading was effective, but with some limits. The teacher researchers suggest that the design of the stems or questions must be very deliberate and purposeful on the part of the teacher. The can be designed to elicit ideas about theme, genre, specific details, confusion with the text, or personal connections to it. Forethought and planning must precede the activity so that teachers design stems that will lead to desired outcomes for a specific text. For those students who have difficulty composing their thoughts on paper, the teacher researchers suggest that these stems could be written on the board or overhead, pondered for a specific time, and then serve as the basis for an oral discussion. This type of "oral journaling" could work in pairs, small groups, or as a whole-class activity.

Finally, the teacher researchers discovered that their original intervention design, in which the strategies were modeled by the teacher, practiced in small groups, and then applied independently, is not always appropriate. Because of the personal reflective nature of metacognition, they discovered that small groups were not always an effective setting to practice the activities. For example, when coding, what one child finds interesting about he text may bore another. What one thinks is a difficult vocabulary word, another recognizes immediately. Also, the noise level in these interactions was at times too high. Thus, the teacher researchers feel that the teacher modeling of these techniques is absolutely essential. Then the students can practice them and *share* their ideas in small groups or pairs, but not try to develop the ideas in these settings, as each student will interpret the text uniquely.

The teacher researchers who participated in this intervention all plan to incorporate these four activities in their respective classrooms in the future. They have witnessed a marked improvement of class participation and level of discussions as compared with classrooms they have taught in the past. They observed students making deeper connections to their other content area classes after learning these techniques. The field of metacognition is the subject of much current research and new discoveries will undoubtedly affect educators.

In conclusion, the teacher researchers encourage other teachers adapt and modify the elements of this intervention to fit the needs and abilities of their own classrooms as a way to improve reading comprehension. Metacognition is difficult to measure, but teacher observation of thinking processes seems to be a key element. Awakening metacognition is a powerful way to improve not only reading comprehension, but to develop more highly motivated, thoughtful, and connected learners who will retain what they have learned and who will transfer this knowledge from specific lessons into other areas of their lives.

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APPENDICES

Appendix A
Permission Letters

SAINT·XAVIER·UNIVERSITY
Institutional Review Board

Consent to Participate in a Research Study
Improving Reading Comprehension Through Metacognitive Reflection

Dear Parent or Guardian,

We are currently enrolled in a master's degree program at Saint Xavier University. This program requires us to design and implement a project on an issue that directly affects our instruction. We have chosen to examine metacognition and reading.

The purpose of this project is to develop metacognitive reflection, which means thinking about one's learning processes. It will help your student improve his or her reading comprehension.

We will be conducting our project during the first half of the 2001-2002 school year. The activities related to the project will take place during regular instructional delivery. The gathering of information for our project during these activities offers no risks of any kind to your child.

Your permission allows us to include your student in the reporting of information for our project. All information gathered will be kept completely confidential, and information included in the project report will be grouped so that no individual can be identified. The report will be used to share what we have learned as a result of this project with other professionals in the field of education.

Participation in this study is completely voluntary. You may choose to withdraw from the study at any time. If you choose not to participate, information gathered about your student will not be included in the report.

If you have any questions or would like further information about our project, please contact us at

If you agree to have your student participate in the project, please sign the attached statement and return it to us. We will be happy to provide you with a copy of the statement if you wish.

Sincerely,

PLEASE RETURN THE ATTACHED STATEMENT BY September 4, 2001.

3700 West 103rd Street • Chicago, Illinois • (773) 298-3000 • FAX (773) 779-9061

SAINT·XAVIER·UNIVERSITY
Institutional Review Board

Consent to Participate in a Research Study
Improving Reading Comprehension Through Metacognitive Reflection

I, ______________________________, the parent/legal guardian of the minor named below, acknowledge that the researcher has explained to me the purpose of this research, identified any risks involved, and offered to answer any questions I may have about the nature of my child's participation. I freely and voluntarily consent to my child's participation in this project. I understand all information gathered during this project will be completely confidential. I also understand that I may keep a copy of this consent form for my own information.

NAME OF MINOR: ______________________________

____
Signature of Parent/Legal Guardian   Date

Appendix B
Nonfiction Reading Comprehension Pretest

"Mexico, Central America, and the Caribbean"

Directions: *Circle the letter of the best answer for each question.*

1. Of which natural resources does Mexico have a large supply of?
   a. gas and oil
   b. gold and silver
   c. coal and wood
   d. oil and gold

2. What is the capital of Honduras?
   a. Kingston
   b. Tegucigalpa
   c. Grenada
   d. Managua

3. What two problems do most countries in Middle America face?
   a. crime and drug abuse
   b. poverty and unemployment
   c. air and water pollution
   d. famine and drought

4. What helped Mexico's economy to grow in the 1950s and 1960s?
   a. shopping malls
   b. schools
   c. factories
   d. taxes

5. Mexico's economy continued to grow in the 1970s due to...
   a. oil
   b. new president
   c. immigration
   d. farming

6. Like Mexico, most Central American countries are influenced by their Spanish and ________________ past.
    a. Mexican
    b. European
    c. Catholic
    d. Indian

7. Which of the following is the best main idea statement for this selection?
    a. The climate of Central America is changing due to global warming.
    b. Immigration to the United States from Central America is growing every year.
    c. The nations of Middle America face economic, political, and social challenges.
    d. The governments of Central America are very similar to that of the United States.

8. In the sentence on p647, "Most Mexicans are mestizos who are proud of their Indian and Spanish past," the word mestizos means:
    a. a Mexican leader
    b. an historical figure
    c. a citizen of Mexico
    d. a person who is part Spanish and part Indian

9. Many Cubans try to flee to America because...
    a. The climate is better.
    b. There are more jobs in the United States.
    c. Life in general is harder in Cuba than the United States.
    d. They have more religious freedom in the United States.

10. In the sentence on page 648, "Puerto Rico is a commonwealth of the United States," commonwealth means that Puerto Rico...
    a. was taken over by the United States
    b. is part of the United States
    c. is part of Mexico
    d. is an enemy of the United States

Appendix C
Fiction Reading Comprehension Pretest

"An Unlikely Heroine"

By Susan Beth Pfeffer

Directions: *Circle the letter of the best answer for each question.*

1. Which of the following sentences best describes the main idea of the story?
   a. Dana is interviewed for a newspaper story.
   b. Dana's friends don't believe she's a hero.
   c. Dana becomes a hero by saving a young child from danger.
   d. Dana gets a cash reward for saving a child.

2. Why does Dana accept the woman's offer of a ride home?
   a. She is shaken up after saving the boy.
   b. She lost her bus money.
   c. Some bullies from school are chasing her.
   d. She injured her leg saving the boy.

3. How can you tell Dana is a brave person?
   a. She does her homework without being told.
   b. She always obeys her parents.
   c. She always stands up to bullies.
   d. She went to the newspaper office even though she was nervous.

4. What happened after Dana saved the boy?
   a. The boy's mother drove her home.
   b. She took the bus home.
   c. Her mother picked her up.
   d. A lady in a shop drove her home.

5. Why doesn't Dana's friend Sharon believe Dana rescued the child?
   a. Dana is a selfish person.
   b. Dana is a liar.
   c. Dana did not act bravely in the past.
   d. Sharon is jealous of Dana.

6. In the sentence, "I guess we'd better prepare ourselves for life with a celebrity," on page 21, the word celebrity means:
   a. a brave person
   b. a famous person
   c. a selfish person
   d. an honest person

7. Where did the rescue take place?
   a. in front of Dana's school
   b. at the bus stop
   c. in front of the newspaper building
   d. at the corner of Main and North Streets

8. In the sentence, "Not that any of that really registered," on page 16, the word registered means:
   a. signed up for classes
   b. a cash drawer
   c. made sense
   d. made her happy

9. Why does Dana think that she shouldn't have to do her homework?
   a. A hero should not have to do homework.
   b. She's the teacher's pet.
   c. She's an "A" student in math.
   d. She's still upset after saving the boy.

10. Who was the boy's mother?
   a. Mrs. Marsh
   b. Mrs. Pfeffer
   c. Mrs. Dutch
   d. Mrs. McKay

Appendix D
Nonfiction Reading Comprehension Pretest, Site A, Classroom A

"Mexico, Central America, and the Caribbean"

Directions: *Circle the letter of the best answer for each question.*

1. Of which natural resources does Mexico have a large supply of?

|| 𝍸 𝍸 [✓ a.] gas and oil
b. gold and silver
c. coal and wood
d. oil and gold

Fact
12/12 100%

2. What is the capital of Honduras?

a. Kingston
| 𝍸 𝍸 [✓ b.] Tegucigalpa
| c. Grenada
d. Managua

Visual/Map
11/12 92%

3. What two problems do most countries in Middle America face?

a. crime and drug abuse
| 𝍸 𝍸 [✓ b.] poverty and unemployment
| c. air and water pollution
d. famine and drought

fact
11/12 92%

4. What helped Mexico's economy to grow in the 1950s and 1960s?

a. shopping malls
b. schools
|| 𝍸 𝍸 [✓ c.] factories
d. taxes

Cause/Effect
12/12 100%

5. Mexico's economy continued to grow in the 1970s due to...

𝍸 𝍸 [✓ a.] oil
b. new president
c. immigration
|| d. farming

Cause/Effect
10/12 83%

6. Like Mexico, most Central American countries are influenced by their Spanish and ________________ past.

| a. Mexican
b. European
c. Catholic
| 𝍸 𝍸 [✓ d.] Indian

fact

11/12 92%

7. Which of the following is the best main idea statement for this selection?

a. The climate of Central America is changing due to global warming.
||| b. Immigration to the United States from Central America is growing every year.
|| 𝍸 [✓ c.] The nations of Middle America face economic, political, and social challenges.
|| d. The governments of Central America are very similar to that of the United States.

Main Idea 7/12 58%

8. In the sentence on p647, "Most Mexicans are mestizos who are proud of their Indian and Spanish past," the word mestizos means:

| a. a Mexican leader
| b. an historical figure
||| c. a citizen of Mexico
|| 𝍸 [✓ d.] a person who is part Spanish and part Indian

Vocabulary

7/12 58%

9. Many Cubans try to flee to Americc because...

a. The climate is better.
𝍸 [✓ b.] There are more jobs in the United States.
𝍸 c. Life in general is harder in Cuba than the United States.
|| d. They have more religious freedom in the United States.

Inferential

5/12

42

10. In the sentence on page 648, "Puerto Rico is a commonwealth of the United States," commonwealth means that Puerto Rico...

||| [✓ a.] was taken over by the United States
| 𝍸 [✓ b.] is part of the United States
| c. is part of Mexico
|| d. is an enemy of the United States

Vocabulary

9/12 75%

Appendix E
Fiction Reading Comprehension Pretest, Site A, Classroom B

Pretest
Tally Sheet

Site A, Classroom
B

"An Unlikely Heroine"

By Susan Beth Pfeffer

#Correc

Directions: *Circle the letter of the best answer for each question.*

m.I. 1. Which of the following sentences best describes the main idea of the story? 12/12

   a. Dana is interviewed for a newspaper story.
   b. Dana's friends don't believe she's a hero.
   c. Dana becomes a hero by saving a young child from danger.
   d. Dana gets a cash reward for saving a child.

C/E 2. Why does Dana accept the woman's offer of a ride home? 7/12

   a. She is shaken up after saving the boy.
   𝍸 b. She lost her bus money.
   c. Some bullies from school are chasing her.
   d. She injured her leg saving the boy.

INFER. 3. How can you tell Dana is a brave person? 9/12

   a. She does her homework without being told.
   b. She always obeys her parents.
   ||| c. She always stands up to bullies.
   d. She went to the newspaper office even though she was nervous.

4. What happened after Dana saved the boy?

   SEQUE. a. The boy's mother drove her home.
   b. She took the bus home. 7/12
   𝍸 c. Her mother picked her up.
   d. A lady in a shop drove her home.

5. Why doesn't Dana's friend Sharon believe Dana rescued the child?

   a. Dana is a selfish person.
   b. Dana is a liar.
   INF. c. Dana did not act bravely in the past. 7/12
   𝍸 d. Sharon is jealous of Dana.

vocab 6. In the sentence, "I guess we'd better prepare ourselves for life with a celebrity," on page 21, the word celebrity means:

𝍸 a. a brave person

b. a famous person 3/12

|||| c. a selfish person

d. an honest person

fact/det 7. Where did the rescue take place? 10/12

a. in front of Dana's school

|| b. at the bus stop

c. in front of the newspaper building

d. at the corner of Main and North Streets

vocab 8. In the sentence, "Not that any of that really registered," on page 16, the word registered means:

𝍸 a. signed up for classes

|| b. a cash drawer

c. made sense 5/12

d. made her happy

c/e 9. Why does Dana think that she shouldn't have to do her homework?

a. A hero should not have to do homework.

𝍸 b. She's the teacher's pet. 3/12

|||| c. She's an "A" student in math.

d. She's still upset after saving the boy.

fact/det 10. Who was the boy's mother?

a. Mrs. Marsh

𝍸 b. Mrs. Pfeffer 4/12

c. Mrs. Dutch

||| d. Mrs. McKay

Appendix F
Fiction Reading Comprehension Pretest, Site B

-2

Tool 2a.

Site B Tally Sheet

"An Unlikely Heroine"

By Susan Beth Pfeffer

Pre-test

Directions: *Circle the letter of the best answer for each question.*

1. Which of the following sentences best describes the main idea of the story?
    - a. Dana is interviewed for a newspaper story.
    - b. Dana's friends don't believe she's a hero.
    - 11 [✓ c.] Dana becomes a hero by saving a young child from danger.
    - 1 d. Dana gets a cash reward for saving a child.

2. Why does Dana accept the woman's offer of a ride home?
    - 6 [✓ a.] She is shaken up after saving the boy.
    - b. She lost her bus money.
    - c. Some bullies from school are chasing her.
    - 6 d. She injured her leg saving the boy.

3. How can you tell Dana is a brave person?
    - 2 a. She does her homework without being told.
    - 2 b. She always obeys her parents.
    - c. She always stands up to bullies.
    - 8 [✓ d.] She went to the newspaper office even though she was nervous.

4. What happened after Dana saved the boy?
    - 4 [✓ a.] The boy's mother drove her home.
    - 1 b. She took the bus home.
    - c. Her mother picked her up.
    - 17 d. A lady in a shop drove her home.

5. Why doesn't Dana's friend Sharon believe Dana rescued the child?
    - a. Dana is a selfish person.
    - b. Dana is a liar.
    - 9 [✓ c.] Dana did not act bravely in the past.
    - 3 d. Sharon is jealous of Dana.

Vocabulary

6. In the sentence, "I guess we'd better prepare ourselves for life with a celebrity," on page 21, the word celebrity means:
   - I a. a brave person
   - IIII 𝍸 b. a famous person
   - c. a selfish person
   - II d. an honest person

9 correct

11 correct

Fact / detail

7. Where did the rescue take place?
   - a. in front of Dana's school
   - I b. at the bus stop
   - c. in front of the newspaper building
   - I 𝍸 𝍸 d. at the corner of Main and North Streets

Vocabulary

8. In the sentence, "Not that any of that really registered," on page 16, the word registered means:
   - a. signed up for classes I
   - b. a cash drawer
   - c. made sense 𝍸 III
   - d. made her happy III

8 correct

8 total

Cause / effect

9. Why does Dana think that she shouldn't have to do her homework?
   - 𝍸 II a. A hero should not have to do homework.
   - I b. She's the teacher's pet.
   - c. She's an "A" student in math.
   - III d. She's still upset after saving the boy.

8 correct

9 correct

Fact / detail

10. Who was the boy's mother?
    - a. Mrs. Marsh I
    - b. Mrs. Pfeffer II
    - c. Mrs. Dutch
    - d. Mrs. McKay 𝍸 IIII

Appendix G
Metacognitive Reading Survey

Metacognitive Reading Awareness Inventory

Directions: Which of the following strategies do you do as a reader? Put a check mark next to the ones you use. Be honest.

1. What do you do if you encounter a word and you don't know what it means?
   - ___ • Use the words around it to figure it out.
   - ___ • Use an outside source, such as a dictionary or expert.
   - ___ • Temporarily ignore it and wait for clarification.
   - ___ • Sound it out.

2. What do you do if you don't know what an entire sentence means?
   - ___ • Read it again.
   - ___ • Sound out all the difficult words.
   - ___ • Think about the other sentences in the paragraph.
   - ___ • Disregard it completely.

3. If you are reading science or social studies material, what would you do to remember the important information you've read?
   - ___ • Skip parts you don't understand.
   - ___ • Ask yourself questions about the important ideas.
   - ___ • Realize you need to remember one point rather than another.
   - ___ • Relate it to something you already know.

4. Before you start to read, what kind of plans do you make to help you read better?
   - ___ • No specific plan is needed; just start reading toward completion of the assignment
   - ___ • Think about what you know about the subject.
   - ___ • Think about why you are reading.
   - ___ • Make sure the entire reading can be finished in as short a period of time as possible.

5. Why would you go back and read an entire passage over again?
____ • You didn't understand it.
____ • To clarify a specific or supporting idea.
____ • It seemed important to remember.
____ • To underline or summarize for study.

6. Knowing that you don't understand a particular sentence while reading involves understanding that
____ • the reader may not have developed adequate links or associations for new words or concepts introduced in the sentence.
____ • the writer may not have conveyed the ideas clearly.
____ • two sentences may purposely contradict each other.
____ • finding meaning for the sentence needlessly slows down the reader.

7. As you read a textbook, which of these do you do?
____ • Adjust your pace depending on the difficulty of the material.
____ • Generally, read at a constant, steady pace.
____ • Skip the parts you don't understand.
____ • Continually make predicitions about what you are reading.

8. While you read, which of these are important?
____ • Know when you know and when you don't know key ideas.
____ • Know what it is that you know in relation to what is being read.
____ • Know that confusing text is common and usually can be ignored.
____ • Know that different strategies can be used to aid understanding.

9. When you come across a part of the text that is confusing, what do you do?
____ • Keep on reading until the text is clarified.
____ • Read ahead and then look back if the text is still unclear.
____ • Skip those sections completely; they are usually not important.
____ • Check to see if the ideas expressed are consistent with one another.

10. Which sentences are the most important in the chapter?
____ • Almost all of the sentences are important; Otherwise, they wouldn't be there.
____ • The sentences that contain the important details or facts.
____ • The sentences that are directly related to the main idea.
____ • The ones that contain the most details.

Directions: Choose the one answer that best describes you.

11. When you have finished reading a selection, how many important ideas do you remember?

____ • I remember most.
____ • I remember some.
____ • I remember a few.
____ • I don't remember any.

12. How do you view yourself as a reader?

____ • Extremely strong.
____ • Average.
____ • Below average.
____ • Very weak.

Adapted from: International Reading Association and Vincent Miholic (1994), "An Inventory to Pique Students' Metacognitive Awareness," Journal of Reading, 38 (2), 84-86.

Appendix H

Metacognitive Reading Survey, Site A, Classroom A

12/2/05

Totals

Metacognitive Reading Awareness Inventory

Directions: Which of the following strategies do you do as a reader? Put a check mark next to the ones you use. Be honest.

1. What do you do if you encounter a word and you don't know what it means?
   - 卌 ||| ____ • + Use the words around it to figure it out. + ⑧
   - 卌 ____ • + Use an outside source, such as a dictionary or expert. + ⑤
   - |||| ____ • + Temporarily ignore it and wait for clarification. + ④
   - 卌 卌 ____ • − Sound it out. − ⑩

2. What do you do if you don't know what an entire sentence means?
   - 卌 卌 | ____ • + Read it again. + ⑪
   - || ____ • − Sound out all the difficult words. − ②
   - 卌 | ____ • + Think about the other sentences in the paragraph. + ⑥
   - |||| ____ • − Disregard it completely. − ④

3. If you are reading science or social studies material, what would you do to remember the important information you've read?
   - | ____ • − Skip parts you don't understand. − ①
   - 卌 ____ • + Ask yourself questions about the important ideas. + ⑤
   - 卌 ||| ____ • + Realize you need to remember one point rather than another. + ⑧
   - 卌 ||| ____ • + Relate it to something you already know. + ⑧

4. Before you start to read, what kind of plans do you make to help you read better?
   - 卌 卌 ____ • − No specific plan is needed; just start reading toward completion of the assignment − ⑩
   - || ____ • + Think about what you know about the subject. + ②
   - |||| ____ • + Think about why you are reading. + ④
   - 卌 ||| ____ • −Make sure the entire reading can be finished in as short a period of time as possible. − ⑧

5. Why would you go back and read an entire passage over again?

𝍸 || ______ • + You didn't understand it. + (7)
|||| ______ • − To clarify a specific or supporting idea. − (4)
𝍸 ||| ______ • + It seemed important to remember. + (8)
𝍸 | ______ • + To underline or summarize for study. + (6)

6. ~~Knowing that you don't understand a particular sentence while reading involves understanding that~~

~~___ • + the reader may not have developed adequate links or associations for new words or concepts introduced in the sentence.~~
~~___ • + the writer may not have conveyed the ideas clearly.~~
~~___ • + two sentences may purposely contradict each other.~~
~~___ • − finding meaning for the sentence needlessly slows down the reader.~~

7. As you read a textbook, which of these do you do?

𝍸 𝍸 ______ • + Adjust your pace depending on the difficulty of the material. + (10)
|||| ______ • − Generally, read at a constant, steady pace. − (4)
𝍸 ______ • − Skip the parts you don't understand. − (5)
𝍸 | ______ • + Continually make predicitions about what you are reading. + (6)

8. While you read, which of these are important?

𝍸 || ______ • + Know when you know and when you don't know key ideas. + (7)
𝍸 || ______ • + Know what it is that you know in relation to what is being read. + (7)
||| ______ • − Know that confusing text is common and usually can be ignored. − (3)
𝍸 | ______ • + Know that different strategies can be used to aid understanding. + (6

9. When you come across a part of the text that is confusing, what do you do?

𝍸 | ______ • + Keep on reading until the text is clarified. + (6)
𝍸 |||| ______ • + Read ahead and then look back if the text is still unclear. + (9)
||| ______ • − Skip those sections completely; they are usually not important. − (3)
||||| ______ • + Check to see if the ideas expressed are consistent with one another. +(

10. Which sentences are the most important in the chapter?

||| ______ • − Almost all of the sentences are important; Otherwise, they wouldn't be there. − (3)
𝍸 𝍸 | ______ • + The sentences that contain the important details or facts. + [illegible] (1
𝍸 || ______ • + The sentences that are directly related to the main idea. + (7)
𝍸 || ______ • − The ones that contain the most details. − (7)

Tarab

Directions: Choose the one answer that best describes you.

11. When you have finished reading a selection, how many important ideas do you remember?

- || I remember most. ②
- 卌 | I remember some. ⑥
- || I remember a few. ②
- || I don't remember any ②

12. How do you view yourself as a reader?

- Extremely strong. ⓪
- 卌 |||| Average. ⑨
- || Below average. ②
- | Very weak ①

Adapted from: International Reading Association and Vincent Miholic (1994), "An Inventory to Pique Students' Metacognitive Awareness," Journal of Reading, 38 (2), 84-86.

Appendix I
Metacognitive Reading Survey, Site A, Classroom B

Pretest Tally Sheet

Site A
Classroom
B

Metacognitive Reading Awareness Inventory

Directions: Which of the following strategies do you do as a reader? Put a check mark next to the ones you use. Be honest.

1. What do you do if you encounter a word and you don't know what it means?

𝍸 III	+	**A** •	8	Use the words around it to figure it out.
III	+	**B** •	3	Use an outside source, such as a dictionary or expert.
	+	**C** •	0	Temporarily ignore it and wait for clarification.
𝍸 𝍸	−	**D** •	10	Sound it out.

2. What do you do if you don't know what an entire sentence means?

𝍸 𝍸	+	**A** •	10	Read it again.
III	−	**B** •	3	Sound out all the difficult words.
𝍸	+	**C** •	5	Think about the other sentences in the paragraph.
II	−	**D** •	2	Disregard it completely.

3. If you are reading science or social studies material, what would you do to remember the important information you've read?

I	−	**A** •	1	Skip parts you don't understand.
𝍸	+	**B** •	5	Ask yourself questions about the important ideas.
IIII	+	**C** •	4	Realize you need to remember one point rather than another.
𝍸	+	**D** •	5	Relate it to something you already know.

4. Before you start to read, what kind of plans do you make to help you read better?

IIII	−	**A** •	4	No specific plan is needed; just start reading toward completion of the assignment
𝍸 I	+	**B** •	6	Think about what you know about the subject.
III	+	**C** •	3	Think about why you are reading.
III	−	**D** •	3	Make sure the entire reading can be finished in as short a period of time as possible.

5. Why would you go back and read an entire passage over again?

𝍸 III + A • 8 You didn't understand it.
𝍸 − B • 5 To clarify a specific or supporting idea.
𝍸 I + C • 6 It seemed important to remember.
III + D • 3 To underline or summarize for study.

~~6. Knowing that you don't understand a particular sentence while reading involves understanding that~~

~~___ • the reader may not have developed adequate links or associations for new words or concepts introduced in the sentence.~~
~~___ • the writer may not have conveyed the ideas clearly.~~
~~___ • two sentences may purposely contradict each other.~~
~~___ • finding meaning for the sentence needlessly slows down the reader.~~

7. As you read a textbook, which of these do you do?

III + A • 3 Adjust your pace depending on the difficulty of the material.
𝍸 IIII − B • 9 Generally, read at a constant, steady pace.
IIII − C • 4 Skip the parts you don't understand.
II + D • 2 Continually make predictions about what you are reading.

8. While you read, which of these are important?

III + A • 3 Know when you know and when you don't know key ideas.
III + B • 3 Know what it is that you know in relation to what is being read.
III − C • 3 Know that confusing text is common and usually can be ignored.
𝍸 I + D • 6 Know that different strategies can be used to aid understanding.

9. When you come across a part of the text that is confusing, what do you do?

𝍸 I + A • 6 Keep on reading until the text is clarified.
IIII + B • 4 Read ahead and then look back if the text is still unclear.
II − C • 2 Skip those sections completely; they are usually not important.
𝍸 I + D • 6 Check to see if the ideas expressed are consistent with one another.

10. Which sentences are the most important in the chapter?

IIII − A • 4 Almost all of the sentences are important; Otherwise, they wouldn't be there.
𝍸 I + B • 6 The sentences that contain the important details or facts.
𝍸 + C • 5 The sentences that are directly related to the main idea.
IIII − D • 4 The ones that contain the most details.

Directions: *Choose the one answer that best describes you.*

11. When you have finished reading a selection, how many important ideas do you remember?

||| ____ **A** • I remember most. 3
𝍸 | ____ **B** • I remember some. 6
| ____ **C** • I remember a few. 1
| ____ **D** • I don't remember any. 1

12. How do you view yourself as a reader?

| ____ **A** • Extremely strong. 1
𝍸 || ____ **B** • Average. 7
|| ____ **C** • Below average. 2
| ____ **D** • Very weak. 1

Adapted from: International Reading Association and Vincent Miholic (1994), "An Inventory to Pique Students' Metacognitive Awareness," Journal of Reading, 38 (2), 84-86.

Appendix J
Metacognitive Reading Survey, Site B

Site B

Metacognitive Reading Awareness Inventory

There's more than one way to cope when you run into difficulties in your reading. Which ways are best? Under each question here, put a check mark beside all the responses you think are effective.

1. What do you do if you encounter a word and you don't know what it means?

6 |||||| A • + Use the words around it to figure it out.
5 卌 B • + Use an outside source, such as a dictionary or expert.
1 | C • + Temporarily ignore it and wait for clarification.
6 |||||| D • — Sound it out.

2. What do you do if you don't know what an entire sentence means?

12 |||||||||||| A • + Read it again.
3 ||| B • — Sound out all the difficult words.
4 |||| C • + Think about the other sentences in the paragraph.
0 0 D • — Disregard it completely.

3. If you are reading science or social studies material, what would you do to remember the important information you've read?

1 | A • — Skip parts you don't understand.
7 ||||||| B + Ask yourself questions about the important ideas.
5 卌 C • + Realize you need to remember one point rather than another.
3 ||| D • + Relate it to something you already know.

4. Before you start to read, what kind of plans do you make to help you read better?

7 || 卌 A • — No specific plan is needed; just start reading toward completion of the assignment
5 卌 B • + Think about what you know about the subject.
3 ||| C • + Think about why you are reading.
0 0 D • — Make sure the entire reading can be finished in as short a period of time as possible.

5. Why would you go back and read an entire passage over again?

9 |||| 卌 A • + You didn't understand it.
5 卌 B • — To clarify a specific or supporting idea.
4 |||| C • + It seemed important to remember.
5 卌 D • + To underline or summarize for study.

Dropped

~~6. Knowing that you don't understand a particular sentence while reading involves understanding that~~

[redacted]

- ~~the reader may not have developed adequate links or associations for new words or concepts introduced in the sentence.~~
- ~~the writer may not have conveyed the ideas clearly.~~
- ~~two sentences may purposely contradict each other.~~
- ~~finding meaning for the sentence needlessly slows down the reader.~~

Dropped

~~7. As you read a textbook, which of these do you do?~~

- 3 ||| ~~Adjust your pace depending on the difficulty of the material.~~
- 5 卌 ~~Generally, read at a constant, steady pace.~~
- 5 卌 ~~Skip the parts you don't understand.~~
- 3 ||| ~~Continually make predicitions about what you are reading.~~

8. While you read, which of these are important?

- 4 |||| + Know when you know and when you don't know key ideas.
- 4 |||| — Know what it is that you know in relation to what is being read.
- 0 0 — Know that confusing text is common and usually can be ignored.
- 8 ||| 卌 + Know that different strategies can be used to aid understanding.

9. When you come across a part of the text that is confusing, what do you do?

- 5 卌 + Keep on reading until the text is clarified.
- 5 卌 + Read ahead and then look back if the text is still unclear.
- 7 || 卌 — Skip those sections completely; they are usually not important.
- 0 0 + Check to see if the ideas expressed are consistent with one another.

10. Which sentences are the most important in the chapter?

- 5 卌 — Almost all of the sentences are important; Otherwise, they wouldn't be there.
- 6 | 卌 + The sentences that contain the important details or facts.
- 6 | 卌 + The sentences that are directly related to the main idea.
- 3 ||| — The ones that contain the most details.

International Reading Association and Vincent Miholic (1994), "An Inventory to Pique Students' Metacognitive Awareness," Journal of Reading, 38 (2), 84-86.

Directions: Choose the one answer that best describes you.

11. When you have finished reading a selection, how many important ideas do you remember?

5 • I remember most.
7 • I remember some.
0 • I remember a few.
0 • I don't remember any.

12. How do you view yourself as a reader?

0 • Extremely strong.
12 • Average.
0 • Below average.
0 • Very weak.

Appendix K
Nonfiction Posttest

"Canada and the United States"

Directions: *Circle the letter of the best answer for each question.*

1. Why have people left their homelands to come to Canada or the United States?
    a. fashion
    b. a sense of adventure
    c. political and religious freedom
    d. war in their homeland

2. Urbanization means the growth of ________________.
    a. agriculture
    b. power
    c. industry
    d. cities

3. Who were the first people to come to North America?
    a. English
    b. French
    c. Indians
    d. Spaniards

4. Jewish people came to North America ________________.
    a. to seek religious freedom
    b. to escape poverty
    c. to avoid slavery
    d. due to language problems

5. ________________ is the act of moving from one country and settling in another.
    a. Recreation
    b. Colonization
    c. Urbanization
    d. Immigration

6. Why did Canada and the United States become urban societies?
    a. There was an inadequate water supply.
    b. They had poor farmland.
    c. Many factories were built.
    d. There was a lack of natural resources.

7. _________________ is officially a bilingual country.
    a. France
    b. Ireland
    c. Canada
    d. United States

8. Which Canadian city is the home to more than 70 different ethnic groups?
    a. Vancouver
    b. Montreal
    c. Quebec
    d. Toronto

9. What does the French phrase "Acces Interdit" mean?
    a. Stop
    b. Do Not Enter
    c. No Parking
    d. Yield

10. Why were some Canadians against the country officially becoming bilingual?
    a. There were more English-speaking that French-speaking Canadians.
    b. It's confusing when things are in two languages.
    c. All people should speak one language.
    d. School books would be difficult to understand.

Appendix L
Fiction Posttest

"The Disappearing Man"

By Isaac Asimov

Directions: *Circle the letter of the best answer for each question.*

1. Which of the following sentences best describes the main idea of the story?
   a. Larry's father, a police officer, takes him to work one day.
   b. Larry helps the police solve a crime.
   c. Larry commits a crime and is caught by the police.
   d. The police try to solve a difficult crime.

2. Larry thinks the police will capture Stockton soon because...
   a. They are smart and well-trained officers.
   b. The police have surrounded the building and he cannot escape.
   c. Stockton will probably turn himself in.
   d. Criminals always make mistakes.

3. In the sentence on page 174, "There's liable to be some shooting," liable means:
   a. certainly will happen
   b. won't happen
   c. might happen
   d. can't happen

4. In the sentence on page 172, "He's got to have a fence - someone to peddle the jewels," fence means:
   a. a wooden barrier
   b. a place for a robber to sell stolen items
   c. a police officers nickname
   d. a tool for breaking in

5. How does Larry's father feel about Larry coming to work with him by the end of the story?
    a. He wishes Larry had stayed home.
    b. He's worried about his safety.
    c. He's proud that Larry helped the police.
    d. He's embarrassed that Larry solved the crime.

6. Where was Larry when Stockton ran passed him?
    a. going home from the library
    b. going to school
    c. going to police headquarters
    d. coming home from the movies

7. Why did Larry think Stockton worked in the building?
    a. He saw him there before.
    b. The door was unlocked.
    c. His name was on the mailbox.
    d. His uniform had the address on it.

8. How do you know Stockton is a smart person?
    a. The police never caught him.
    b. He tricked the police by wearing a uniform.
    c. He hid in a large building.
    d. Larry's dad said he was a slippery fellow.

9. What was the name of the business on the second floor of the building?
    a. Cary's Bakery
    b. Klein and Levy, Tailors
    c. Frank's Theatrical Costumes
    d. Fitzgerald's Jeweler

10. How did Larry know about the jewel robberies?
    a. He read about them in the newspaper.
    b. He heard about them on television.
    c. His father was a detective on the case.
    d. He heard about it at school.

Appendix M
"Think Aloud" Teacher Instruments

Observation Checklist for Think Aloud Activity

Reading Selection:________________________ Date:______________

	None	Few	Some	Many
Number of students representing thinking or "private speech" in oral or written form				
Number of students showing evidence of comprehension				

Comments:

Sample Cognitive Responses for "Think Alouds"

During the oral reading of a short selection, the teacher researcher would model these types of responses and questions.

For fictional pieces:

- "I wonder what this story will be about? The title makes me predict that ..."
- "This reminds me of a fairy tale I once read."
- "A drawbridge? They must live in a castle!"
- "I'm not sure if the main character is a boy or girl - Courtney?"
- "Must be a boy if he's going to be a squire."
- "I think he's going to end up in love with the princess!"
- "I wish I had a horse ... mine would be all black."
- The king reminds me of that mean guy in our Social Studies book - King Richard."

For non-fictional pieces:

- "What is the title?"
- "I think this chapter will be about..."
- "This idea seems important, like it could be on a test ..."
- "I don't understand what this means ..."
- "Italics - this must be important."
- "This is so different from/similar to ..."
- "I wonder what the effect of this will be on ..."

Appendix N
Coding Teacher Instruments

Metacognition Coding Symbols

O	Old information. *I've heard this before.*
I	Important information. *The teacher will probably ask this on a test.*
N	New information. *I didn't know this before.*
?	Confusing. *I don't understand this.*
B	Boring. *This is not interesting.*
D	Disagree. *I don't believe this is possible.*
A	Agree. *I think this could probably happen.*
:)	Funny. *This makes me laugh.*
V	New Vocabulary *This word is new to me or seems important.*

Modified from: Metacognition. http://www.uncwil.edu/people/sherrilld/edn352/metaconition.htm

Observation Checklist for Reading Coding Symbols

Reading Selection:________________________ Date:______________

	None	Few	Some	Many
Number of students using the symbols effectively				
Number of students participating in discussion of the text				

Comments:

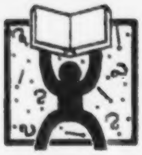
Appendix O
Reflection Connection Teacher Instruments

The Reflection Connection

Title: ____________________ Chapter or Page Numbers: _______

What was **cool** about what you read?

What was **confusing** about what you read?



What **connections** did you make to the reading?

Appendix P
Reader's Response Journal Teacher Instruments

Checklist for Reader's Response Journal

Reading Selection:____________________ Date:____________

Journal Stem:______________________________________

The student shows:	Not Yet	Sometimes	Often
References to the text			
References to cognitive and metacognitive thinking processes			
References to outside knowledge			

Comments:

Reader Response Journal Reflective Stems

- What do I remember about the passage I just read?

- How does this reading fit in to what we have learned so far?

- What is important about what I read?

- What did I like about the passage I just read?

- How would I rate the passage I just read? Circle one.

  *   **   ***   ****

  Why would you give this rating?

- When I was reading, I had difficulty with...because...

Reader's Response Journal Entry

Be sure to:

- *refer to the story;*
- *comment on your thinking;*
- *and connect to your life.*

Journal stem: ______________________________

Appendix Q
Anecdotal Record Forms

WEEK OF ________________

ACTIONS TAKEN:

REFLECTION:

Pluses (+)	Minuses (-)	Interesting (?)

COMMENTS NOTES (*Continued on back, as needed*):

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Observation:__________________________ Date:_______

#1	#2	#3
#4	#5	#6
#7	#8	#9
#10	#11	#12

Appendix R
"Think Aloud" T-chart, Site A, Classroom A

Think aloud

New INFO	Questions
• At school if thee were kids that would laz around the would get beaten or expelled.	• How come they were always stric
• That must be hard to remember 700 pictures by heart.	• How come the boys had to start to work when they wer 12 years old,
• Seven years is a short time for them to get out of school.	• Why if there wer lazy boys and why di they get beaten,
	• How did they mak reed pens,
• That children start school when thee 5 years old,	• Why did children have to learn law.
• That kids wrote hieroglyphs on pottery.	• What kind of jobs did they have to do.
Yes it helped	• What are scribes.

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Appendix S
Reflection Connection Form, Site A, Classroom A

The Reflection Connection

Title: Sparta & Athens Chapter or Page Numbers: 142-147

What was cool about what you read?

- When the persians tryied to invaid and lost
- When the boys had to be naked

What was confusing about what you read?

- Sparta's thought they were though and Athens defeated them.
- when the girls wrestled and boys were naked.

What connections did you make to the reading?

- This reminds me of when the taliban invaded war there under attack
- My mom reminds me of a Sparta
  My dad reminds me of a Athen

Appendix T
Reader's Response Journal, Site A, Classroom A

Reader's Response Journal Entry

Be sure to: *refer to the text;*
comment on your thinking;
and connect to you life.

Journal stem: What should happen to the terrorists under Hammurabi's "eye for an eye" justice?

Our group thinks that the terrorists should die by going in there airplanes and co into their main buildings. We think that beco in Hammurabi's code's the punishment woul the same. For example, if you are in a fight somebody cuts your arm off, than you sh do the same thing to them. Steven and think that our brothers and sisters sh get the same punishments that what they do to us. Cause that would be fair just like the attack.

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Appendix U
"Think aloud," Site A, Classroom B

"Brain Reading" Strategies

1. Make at least two predictions about what will happen next in the story. See if you were right (confirm) or wrong (refute) about your predictions. It's quite all right to be wrong by the way!

A. A canoe goes through the rapids
and gets stuck.

B. People who are traveling around the
world find treasures in the rapids.

2. Ask yourself two questions about what you're reading. Answer the questions when you discover new information.

1. What is the Devil's Jaws?

The whirlpool.

2. If Sylvain didn't have fear of anything why did
he run when the saw the bear?

He really wasn't without any fear.

3. Make two comments on characters in the story about what they are saying or doing.

Sylvain says he doesn't fear anything but
he actually does.

I think that Francois is smart for
diving into the river.

4. Make at least two connections to your own personal experiences that relcte to what you are reading in some way.

I read a book that is similar
to this book.

When I was younger, I watched
a play that had sort of the same charachte

5. After reading, think about the whole selection. Create a statement that summarizes the main idea of what you just read.

This story is about two Canadian trappers
who go on a canoe trip but get chase
by a bear. One character rides on a cano
with a bear but finds out and swims back

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Appendix V
Reflection Connection form, Site A, Classroom B

The Reflection Connection

Title: "The Pig and the Pirates" Chapter or Page Numbers: ______

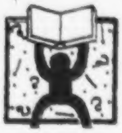
What was cool about what you read?

= It was cool how they came up with a solution to get a pig.

= How Drosilla reacted when she saw the sock

=. their accent

What was confusing about what you read?



= What does addleheaded mean?

= What does Palmettos mean?

What connections did you make to the reading?

= Reminds me of litte Runt.

= I never had a pig who ran away Yet I never had a pig.

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Appendix W
"Think aloud" T-Chart, Site B

The Mysterious Visitors

New Info	Questions
- Baucis and Philemon are two old mortals	- Who are the
- Baucis and Philemon (B&P) had	strangers?
two strangers came to their door	
and B&P were very nice to them by feeding them & bathing	- Are the strangers
- The strangers were Mercury	nice?
and Jupiter	
- B&P were shocked to have Jupiter	- What does impish mean?
at their cottage.	mysterious, to get into trouble
- Baucis & Philemon love visitors	Why did
- Mercury & Jupiter asked them	- Mecury & Jupiter take
to come to Mt. Olympus w/them	B&P to Mt Olympus?
because the cantry will be destroyed and they were so nice to them.	
- When they came to Mt. O the	-
cantry below them began to	
fill up with water but their	
cottage sat on top all nice & pretty	
- M&J told them to make a wish	
so they wished to die together -	
to be keepers of their temple.	
- One day they both ~~B&P~~ began	
to turn into trees B-linden P-oak	
all together by one trunk	
- Moral - Treat others the	
way you want to be treated.	

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Appendix X
Reflection Connection form, Site B

The Reflection Connection

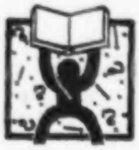
Title: Bridge to Terabithia Chapter or Page Numbers: 4: 29-47

What was cool about what you read?

That a girl can run faster then a boy, espically when Jesse was running everyday.

What was confusing about what you read?

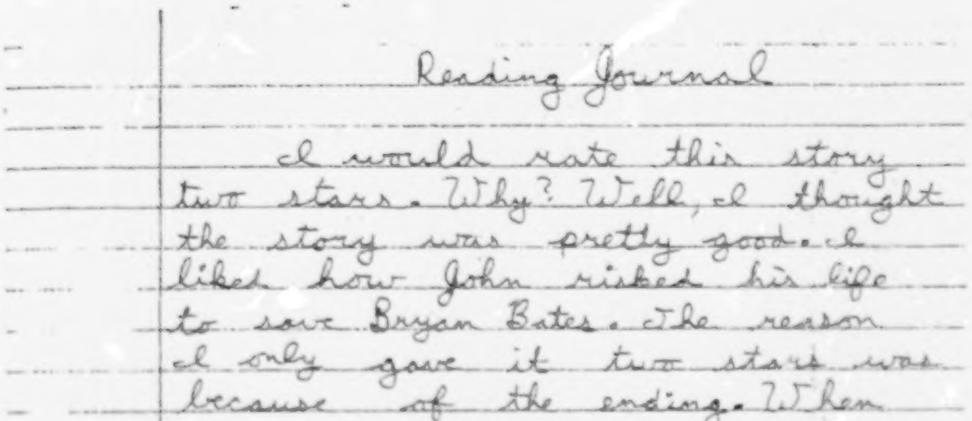
The confusing thing was how come Leslie doesn't have a T.V., but, her parents are rich?



What connections did you make to the reading?

I wanted to be the fastest kid in fifth grade, but, I wasen't, just like Jesse.

Appendix Y
Reader's Response journal, Site B



Reading Journal

I would rate this story two stars. Why? Well, I thought the story was pretty good. I liked how John risked his life to save Bryan Bates. The reason I only gave it two stars was because of the ending. When I read it, I wanted to cry. I would have given it only one star, but it taught me something that I think is important, help others.

Questions

5 How would I rate the passage I just read?

6 Why would you give this rating?

Appendix Z

Nonfiction reading comprehension posttest, Site A, Classroom A

TOTALS

"Canada and the United States"

Directions: *Circle the letter of the best answer for each question.*

1. Why have people left their homelands to come to Canada or the United States?
   - | a. fashion ①
   - b. a sense of adventure ⓪
   - | 卌 卌 [✓ c.] political and religious freedom ⑪ MI
   - d. war in their homeland ⓪

2. Urbanization means the growth of ________________.
   - a. agriculture ⓪
   - b. power ⓪
   - c. industry ⓪ VOCAB
   - || 卌 卌 [✓ d.] cities ⑫

3. Who were the first people to come to North America?
   - a. English ⓪
   - b. French ⓪
   - || 卌 卌 [✓ c.] Indians ⑫ FACT
   - d. Spaniards ⓪

4. Jewish people came to North America ________________.
   - 卌 卌 [✓ a.] to seek religious freedom ⑩
   - b. to escape poverty ⓪
   - || c. to avoid slavery ② C/E
   - d. due to language problems ⓪

5. ________________ is the act of moving from one country and settling in another.
   - || a. Recreation ②
   - b. Colonization ⓪
   - | c. Urbanization ① VOCAB
   - 卌 |||| [✓ d.] Immigration ⑨

6. Why did Canada and the United States become urban societies?

|| ____ a. There was an inadequate water supply. ②

____ b. They had poor farmland. ⓪

~~||||~~ || ____ [✓ c.] Many factories were built. ⑦

||| ____ d. There was a lack of natural resources. ③

C/E

7. ______________ is officially a bilingual country.

a. France ⓪

| ____ b. Ireland ①

| ~~||||~~ ~~||||~~ ____ [✓ c.] Canada ⑪

____ d. United States ⓪

FACT

8. Which Canadian city is the home to more than 70 different ethnic groups?

| ____ a. Vancouver ①

|| ____ b. Montreal ②

|| ____ c. Quebec ②

~~||||~~ || ____ [✓ d.] ~~Ottawa~~ Toronto ⑦

FACT

9. What does the French phrase "Acces Interdit" mean?

| ____ a. Stop ①

| ~~||||~~ ~~||||~~ ____ [✓ b.] Do Not Enter ⑪

____ c. No Parking ⓪

____ d. Yield ⓪

MAPS/CHARTS/
PICTURES/CAPTIONS

10. Why were some Canadians against the country officially becoming bilingual?

|| ____ [✓ a.] There were more English-speaking that French-speaking Canadians. ②

| ____ b. It's confusing when things are in two languages. ①

|| ____ c. All people should speak one language. ②

~~||||~~ || ____ d. School books would be difficult to understand. ⑦

INF

Appendix AA
Fiction reading comprehension posttest, Site A, Classroom B

Posttest
Tally Sheet

Site A,
Classroom B

"The Disappearing Man"

By Isaac Asimov

Directions: *Circle the letter of the best answer for each question.*

||||
MI
1. Which of the following sentences best describes the main idea of the story? 7/11
   a. Larry's father, a police officer, takes him to work one day.
   b. Larry helps the police solve a crime.
   c. Larry commits a crime and is caught by the police.
   d. The police try to solve a difficult crime.

||||
CE
2. Larry thinks the police will capture Stockton soon because... 7/11
   a. They are smart and well-trained officers.
   b. The police have surrounded the building and he cannot escape.
   c. Stockton will probably turn himself in.
   d. Criminals always make mistakes.

|
Vocab
3. In the sentence on page 174, "There's liable to be some shooting," liable means: 10/11
   a. certainly will happen
   b. won't happen
   c. might happen
   d. can't happen

卌 |
Vocab
4. In the sentence on page 172, "He's got to have a fence - someone to peddle the jewels," fence means: 5/11
   a. a wooden barrier
   b. a place for a robber to sell stolen items
   c. a police officers nickname
   d. a tool for breaking in

|||| 5. How does Larry's father feel about Larry coming to work with him by the end of the story?

inf.

7/11

- a. He wishes Larry had stayed home.
- b. He's worried about his safety.
- c. He's proud that Larry helped the police.
- d. He's embarrassed that Larry solved the crime.

6. Where was Larry when Stockton ran passed him?

seque.

11/11

- a. going home from the library
- b. going to school
- c. going to police headquarters
- d. coming home from the movies

|||| 7. Why did Larry think Stockton worked in the building?

c/e

7/11

- a. He saw him there before.
- b. The door was unlocked.
- c. His name was on the mailbox.
- d. His uniform had the address on it.

|||| 8. How do you know Stockton is a smart person?

INF

7/11

- a. The police never caught him.
- b. He tricked the police by wearing a uniform.
- c. He hid in a large building.
- d. Larry's dad said he was a slippery fellow.

卌 9. What was the name of the business on the second floor of the building?

facts

6/11

- a. Cary's Bakery
- b. Klein and Levy, Tailors
- c. Frank's Theatrical Costumes
- d. Fitzgerald's Jeweler

| 10. How did Larry know about the jewel robberies?

facts

9/11

- a. He read about them in the newspaper.
- b. He heard about them on television.
- c. His father was a detective on the case.
- d. He heard about it at school.

Appendix BB
Fiction reading comprehension posttest, Site B

Site B (Context clues Inferences) * 11 students (1 left in middle of yr.)

"The Disappearing Man"

By Isaac Asimov

Directions: *Circle the letter of the best answer for each question.*

1. Which of the following sentences best describes the main idea of the story? MI
   - 0 a. Larry's father, a police officer, takes him to work one day.
   - 1 (9) [✓ b.] Larry helps the police solve a crime. 9 con
   - 0 c. Larry commits a crime and is caught by the police.
   - 2 d. The police try to solve a difficult crime. 82% → 18% in

2. Larry thinks the police will capture Stockton soon because... 10 con
   - a. They are smart and well-trained officers.
   - 91% correct 10 [✓ b.] The police have surrounded the building and he cannot escape.
   - 9% incorrect 1 c. Stockton will probably turn himself in. c/E
   - d. Criminals always make mistakes.

3. In the sentence on page 174, "There's liable to be some shooting," liable means:
   - 91% correct 9% incorrect X1 [✓ a.] certainly will happen 10 con
   - b. won't happen
   - 10 c. might happen
   - d. can't happen c/c

4. In the sentence on page 172, "He's got to have a fence - someone to peddle the jewels," fence means:
   - 55% correct 45% incorrect
   - a. a wooden barrier
   - 6 [✓ b.] a place for a robber to sell stolen items 6 corre
   - c. a police officers nickname
   - 5 d. a tool for breaking in c/c ✓

5. How does Larry's father feel about Larry coming to work with him by the end of the story?
    1 a. He wishes Larry had stayed home.
    3 b. He's worried about his safety.
    7 c. He's proud that Larry helped the police.
    0 d. He's embarrassed that Larry solved the crime.

Inf

7 correc

64% correct 36% in

6. Where was Larry when Stockton ran passed him?
    10 a. going home from the library
    b. going to school
    1 c. going to police headquarters
    d. coming home from the movies

sequence

91% correct 10 correct 9% incorrect

7. Why did Larry think Stockton worked in the building?
    (3) a. He saw him there before.
    (7) b. The door was unlocked.
    0 c. His name was on the mailbox.
    (1) d. His uniform had the address on it.

c/e

64% 7 correct 36% incorre

8. How do you know Stockton is a smart person?
    (2) a. The police never caught him.
    (5) b. He tricked the police by wearing a uniform.
    (1) c. He hid in a large building.
    (3) d. Larry's dad said he was a slippery fellow.

45% 5 correct 55% incorrect

Inf

9. What was the name of the business on the second floor of the building?
    a. Cary's Bakery
    (10) b. Klein and Levy, Tailors
    c. Frank's Theatrical Costumes
    (1) d. Fitzgerald's Jeweler

91% correct 9% incorrect

10 facts Correc

10. How did Larry know about the jewel robberies?
    a. He read about them in the newspaper.
    b. He heard about them on television.
    (11) c. His father was a detective on the case.
    d. He heard about it at school.

100% correct

11 corr

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